Appendix 2. Linear Algebra PACKage (LAPACK) timing data of the Eigensystem Routines.

The timing data refer to the Eigensystem Routines.
The Fortran ETIME routine was used in timing routines.
In the left column we report the data of SP1.
In the right column we report the related data of SP2.

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Timing the Symmetric Eigenvalue Problem routines
   DSYTRD, DSTEQR, and DSTERF

LAPACK VERSION 1.1, released March 31, 1993

The following parameter values will be used:
   Values of N   :      50   100   200   300   400
   Values of NB  :       1    16    32    48    64
   Values of LDA :     401   401   401   401   401

Minimum time a subroutine will be timed =      .00 seconds


****** Results for DSYTRD    ******
    line  1 with LDA =  401, NB =   1
    line  2 with LDA =  401, NB =  16
    line  3 with LDA =  401, NB =  32
    line  4 with LDA =  401, NB =  48
    line  5 with LDA =  401, NB =  64

*** Time in seconds ***
       N      50       100       200       300       400
  Type
     1     1.00E-02 4.00E-02  .29       .95       2.2
           1.00E-02 5.00E-02  .31       1.0       2.4
           1.00E-02 5.00E-02  .37       1.1       2.6
           1.00E-02 7.00E-02  .40       1.2       2.7
           0.00E+00 6.00E-02  .44       1.3       3.0

     2     0.00E+00 4.00E-02  .31       .97       2.2
           1.00E-02 5.00E-02  .33       1.1       2.5
           1.00E-02 4.00E-02  .37       1.2       2.7
           1.00E-02 7.00E-02  .41       1.2       3.0
           0.00E+00 6.00E-02  .42       1.3       3.0

     3     0.00E+00 3.00E-02  .28       .97       2.3
           1.00E-02 5.00E-02  .34       1.1       2.5
           1.00E-02 5.00E-02  .37       1.2       2.7
           1.00E-02 7.00E-02  .42       1.2       2.7
           1.00E-02 6.00E-02  .43       1.3       2.7

     4     0.00E+00 4.00E-02  .31       .95       2.2
           1.00E-02 4.00E-02  .32       1.0       2.4
           1.00E-02 6.00E-02  .37       1.2       2.6
           1.00E-02 6.00E-02  .40       1.2       2.7
           1.00E-02 7.00E-02  .43       1.2       2.9

*** Number of floating-point operations ***
       N      50       100       200       300       400
  Type
     1     1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
           1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
           1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
           1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
```

```
Timing the Symmetric Eigenvalue Problem routines
   DSYTRD, DSTEQR, and DSTERF

LAPACK VERSION 2.0, released September 30, 1994

The following parameter values will be used:
   Values of N   :      50   100   200   300   400
   Values of NB  :       1    16    32    48    64
   Values of LDA :     401   401   401   401   401

Minimum time a subroutine will be timed =      .00 seconds


****** Results for DSYTRD    ******
    line  1 with LDA =  401, NB =   1
    line  2 with LDA =  401, NB =  16
    line  3 with LDA =  401, NB =  32
    line  4 with LDA =  401, NB =  48
    line  5 with LDA =  401, NB =  64

*** Time in seconds ***
       N      50       100       200       300       400
  Type
     1     2.00E-02 4.00E-02  .18       .62       1.5
           1.00E-02 2.00E-02  .18       .60       1.5
           0.00E+00 3.00E-02  .22       .73       1.7
           1.00E-02 4.00E-02  .24       .80       1.9
           0.00E+00 4.00E-02  .29       .92       2.1

     2     0.00E+00 1.00E-02  .19       .63       1.4
           1.00E-02 3.00E-02  .17       .58       1.4
           0.00E+00 3.00E-02  .21       .72       1.7
           1.00E-02 3.00E-02  .26       .84       1.9
           0.00E+00 4.00E-02  .30       .88       2.0

     3     1.00E-02 2.00E-02  .19       .62       1.4
           0.00E+00 3.00E-02  .17       .60       1.5
           1.00E-02 3.00E-02  .22       .73       1.7
           1.00E-02 4.00E-02  .26       .82       1.9
           0.00E+00 3.00E-02  .30       .87       2.0

     4     1.00E-02 2.00E-02  .19       .59       1.5
           0.00E+00 2.00E-02  .17       .58       1.4
           1.00E-02 4.00E-02  .21       .68       1.7
           0.00E+00 3.00E-02  .26       .80       1.8
           1.00E-02 2.00E-02  .32       .85       2.0

*** Number of floating-point operations ***
       N      50       100       200       300       400
  Type
     1     1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
           1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
           1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
           1.75E+05 1.37E+06 1.08E+07 3.63E+07 8.59E+07
```

	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
2	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
3	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
4	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07

*** Speed in megaflops ***

N	50	100	200	300	400
Type					
1	18.	34.	37.	38.	39.
	18.	27.	35.	35.	35.
	18.	27.	29.	32.	33.
	18.	20.	27.	30.	31.
	0.00E+00	23.	25.	28.	29.
2	0.00E+00	34.	35.	37.	38.
	18.	27.	33.	34.	34.
	18.	34.	29.	31.	32.
	18.	20.	26.	29.	29.
	0.00E+00	23.	26.	28.	29.
3	0.00E+00	46.	39.	37.	37.
	18.	27.	32.	34.	34.
	18.	27.	29.	30.	32.
	18.	20.	26.	30.	32.
	18.	23.	25.	28.	32.
4	0.00E+00	34.	35.	38.	39.
	18.	34.	34.	35.	36.
	18.	23.	29.	30.	33.
	18.	23.	27.	30.	31.
	18.	20.	25.	30.	30.

****** Results for DSTEQR(N) ******
with LDA = 401

*** Time in seconds ***

N	50	100	200	300	400
Type					
1	1.00E-02	3.00E-02	.13	.24	.50

	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
2	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
3	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
4	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07
	1.75E+05	1.37E+06	1.08E+07	3.63E+07	8.59E+07

*** Speed in megaflops ***

N	50	100	200	300	400
Type					
1	8.8	34.	60.	59.	58.
	18.	68.	60.	61.	58.
	0.00E+00	46.	49.	50.	50.
	18.	34.	45.	45.	44.
	0.00E+00	34.	37.	39.	41.
2	0.00E+00	1.37E+02	57.	58.	60.
	18.	46.	64.	63.	60.
	0.00E+00	46.	51.	50.	50.
	18.	46.	42.	43.	45.
	0.00E+00	34.	36.	41.	42.
3	18.	68.	57.	59.	60.
	0.00E+00	46.	64.	61.	58.
	18.	46.	49.	50.	51.
	18.	34.	42.	44.	45.
	0.00E+00	46.	36.	42.	42.
4	18.	68.	57.	62.	59.
	0.00E+00	68.	64.	63.	60.
	18.	34.	51.	53.	50.
	0.00E+00	46.	42.	45.	46.
	18.	68.	34.	43.	43.

****** Results for DSTEQR(N) ******
with LDA = 401

*** Time in seconds ***

N	50	100	200	300	400
Type					
1	1.00E-02	3.00E-02	.11	.21	.37

2	1.00E-02	3.00E-02	9.00E-02	.20	.37
3	2.00E-02	3.00E-02	.12	.23	.36
4	0.00E+00	1.00E-02	5.00E-02	9.00E-02	.18

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	6.18E+04	2.45E+05	9.02E+05	1.93E+06	3.36E+06
2	4.84E+04	1.87E+05	7.07E+05	1.44E+06	2.65E+06
3	5.22E+04	2.25E+05	8.13E+05	1.70E+06	2.73E+06
4	2.75E+04	8.39E+04	3.08E+05	6.06E+05	1.13E+06

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	6.2	8.2	6.9	8.0	6.7
2	4.8	6.2	7.9	7.2	7.2
3	2.6	7.5	6.8	7.4	7.6
4	0.00E+00	8.4	6.2	6.7	6.3

****** Results for DSTEQR(V) ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	4.00E-02	.23	1.6	5.2	12.
2	3.00E-02	.17	1.3	3.8	9.2
3	3.00E-02	.24	1.4	4.5	9.1
4	1.00E-02	7.00E-02	.57	1.6	3.9

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	9.20E+05	7.13E+06	5.21E+07	1.66E+08	3.86E+08
2	7.25E+05	5.46E+06	4.08E+07	1.24E+08	3.04E+08
3	7.74E+05	6.55E+06	4.69E+07	1.47E+08	3.14E+08
4	4.02E+05	2.41E+06	1.76E+07	5.18E+07	1.29E+08

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	23.	31.	32.	32.	33.
2	24.	32.	32.	33.	33.
3	26.	27.	32.	33.	34.
4	40.	34.	31.	33.	33.

****** Results for DSTERF ******
with LDA = 401

*** Time in seconds ***

N	50	100	200	300	400

2	1.00E-02	3.00E-02	8.00E-02	.17	.31
3	0.00E+00	3.00E-02	1.00E-01	.19	.31
4	0.00E+00	1.00E-02	4.00E-02	8.00E-02	.14

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	6.54E+04	2.59E+05	9.48E+05	2.02E+06	3.54E+06
2	5.07E+04	2.00E+05	7.51E+05	1.53E+06	2.86E+06
3	5.46E+04	2.38E+05	8.62E+05	1.78E+06	2.90E+06
4	2.95E+04	8.98E+04	3.30E+05	6.47E+05	1.21E+06

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	6.5	8.6	8.6	9.6	9.6
2	5.1	6.7	9.4	9.0	9.2
3	0.00E+00	7.9	8.6	9.4	9.4
4	0.00E+00	9.0	8.2	8.1	8.6

****** Results for DSTEQR(V) ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	3.00E-02	.11	.82	2.5	5.7
2	1.00E-02	1.00E-01	.64	1.9	4.5
3	2.00E-02	.11	.74	2.2	4.6
4	1.00E-02	4.00E-02	.28	.75	1.9

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	9.32E+05	7.20E+06	5.23E+07	1.67E+08	3.88E+08
2	7.25E+05	5.57E+06	4.14E+07	1.26E+08	3.13E+08
3	7.72E+05	6.61E+06	4.74E+07	1.46E+08	3.18E+08
4	4.10E+05	2.45E+06	1.79E+07	5.27E+07	1.31E+08

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	31.	65.	64.	66.	68.
2	73.	56.	65.	67.	69.
3	39.	60.	64.	65.	69.
4	41.	61.	64.	70.	69.

****** Results for DSTERF ******
with LDA = 401

*** Time in seconds ***

N	50	100	200	300	400

Type					
1	1.00E-02	2.00E-02	.11	.24	.41
2	2.00E-02	2.00E-02	6.00E-02	.13	.23
3	1.00E-02	3.00E-02	1.00E-01	.19	.33
4	0.00E+00	1.00E-02	3.00E-02	8.00E-02	.14

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	4.51E+04	1.77E+05	6.48E+05	1.38E+06	2.40E+06
2	2.42E+04	9.19E+04	3.55E+05	7.35E+05	1.38E+06
3	3.71E+04	1.60E+05	5.85E+05	1.22E+06	2.01E+06
4	1.93E+04	5.80E+04	2.05E+05	4.07E+05	7.54E+05

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	4.5	8.8	5.9	5.8	5.9
2	1.2	4.6	5.9	5.7	6.0
3	3.7	5.3	5.9	6.4	6.1
4	0.00E+00	5.8	6.8	5.1	5.4

****** Results for DPTEQR(N) ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	2.00E-02	7.00E-02	.27	.61	1.0
2	0.00E+00	3.00E-02	.11	.23	.46
3	2.00E-02	7.00E-02	.28	.66	1.0
4	1.00E-02	3.00E-02	.11	.23	.37

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	1.13E+05	3.64E+05	1.46E+06	3.28E+06	5.73E+06
2	3.48E+04	1.31E+05	4.66E+05	9.79E+05	1.80E+06
3	9.55E+04	4.04E+05	1.53E+06	3.54E+06	5.83E+06
4	3.29E+04	1.16E+05	4.51E+05	9.41E+05	1.72E+06

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	5.7	5.2	5.4	5.4	5.6
2	0.00E+00	4.4	4.2	4.3	3.9
3	4.8	5.8	5.5	5.4	5.6
4	3.3	3.9	4.1	4.1	4.6

****** Results for DPTEQR(V) ******
with LDA = 401

Type					
1	0.00E+00	1.00E-02	6.00E-02	.11	.17
2	1.00E-02	1.00E-02	2.00E-02	5.00E-02	1.00E-01
3	0.00E+00	1.00E-02	6.00E-02	9.00E-02	.14
4	0.00E+00	1.00E-02	2.00E-02	3.00E-02	5.00E-02

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	4.56E+04	1.78E+05	6.50E+05	1.38E+06	2.42E+06
2	2.44E+04	9.38E+04	3.58E+05	7.45E+05	1.39E+06
3	3.71E+04	1.60E+05	5.86E+05	1.23E+06	2.03E+06
4	1.96E+04	5.93E+04	2.08E+05	4.11E+05	7.66E+05

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	0.00E+00	18.	11.	13.	14.
2	2.4	9.4	18.	15.	14.
3	0.00E+00	16.	9.8	14.	15.
4	0.00E+00	5.9	10.	14.	15.

****** Results for DPTEQR(N) ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	0.00E+00	2.00E-02	7.00E-02	.16	.29
2	0.00E+00	2.00E-02	3.00E-02	7.00E-02	.12
3	1.00E-02	3.00E-02	8.00E-02	.20	.43
4	1.00E-02	1.00E-02	3.00E-02	6.00E-02	.11

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	5.40E+04	1.69E+05	6.56E+05	1.45E+06	2.57E+06
2	2.62E+04	9.06E+04	2.96E+05	6.36E+05	1.14E+06
3	7.58E+04	2.16E+05	9.09E+05	2.19E+06	4.80E+06
4	2.43E+04	8.24E+04	2.95E+05	5.79E+05	9.96E+05

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	0.00E+00	8.5	9.4	9.1	8.9
2	0.00E+00	4.5	9.9	9.1	9.5
3	7.6	7.2	11.	11.	11.
4	2.4	8.2	9.8	9.6	9.1

****** Results for DPTEQR(V) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	5.00E-02	.25	1.8	5.8	13.
2	3.00E-02	.11	.79	2.3	5.5
3	4.00E-02	.28	1.9	6.1	13.
4	2.00E-02	1.00E-01	.71	2.0	4.7

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	1.08E+06	6.70E+06	5.26E+07	1.76E+08	4.08E+08
2	4.42E+05	3.26E+06	2.30E+07	7.15E+07	1.76E+08
3	9.11E+05	7.42E+06	5.52E+07	1.90E+08	4.15E+08
4	3.72E+05	2.78E+06	2.10E+07	6.29E+07	1.49E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	22.	27.	30.	31.	33.
2	15.	30.	29.	31.	32.
3	23.	27.	30.	31.	32.
4	19.	28.	30.	31.	32.

****** Results for DSTEBZ(I) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	9.00E-02	.37	1.3	2.9	5.2
2	4.00E-02	.18	.73	1.6	2.7
3	0.00E+00	1.00E-02	2.00E-02	3.00E-02	3.00E-02
4	6.00E-02	.19	.72	1.6	2.8

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	3.65E+05	1.43E+06	5.55E+06	1.23E+07	2.17E+07
2	2.09E+05	7.87E+05	3.02E+06	6.62E+06	1.16E+07
3	1.72E+04	3.63E+04	7.31E+04	1.10E+05	1.43E+05
4	2.00E+05	8.11E+05	3.00E+06	6.43E+06	1.14E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	4.1	3.9	4.2	4.2	4.2
2	5.2	4.4	4.1	4.2	4.3
3	0.00E+00	3.6	3.7	3.7	4.8
4	3.3	4.3	4.2	4.1	4.0

****** Results for DSTEBZ(V) ******

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	3.00E-02	.14	.94	2.9	6.5
2	1.00E-02	5.00E-02	.41	1.2	2.7
3	3.00E-02	.15	.97	3.2	6.4
4	1.00E-02	6.00E-02	.36	.99	2.3

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	1.09E+06	6.72E+06	5.27E+07	1.76E+08	4.05E+08
2	4.44E+05	3.27E+06	2.30E+07	7.15E+07	1.76E+08
3	9.17E+05	7.60E+06	5.52E+07	1.93E+08	4.16E+08
4	3.74E+05	2.79E+06	2.11E+07	6.29E+07	1.49E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	36.	48.	56.	61.	62.
2	44.	65.	56.	62.	65.
3	31.	51.	57.	61.	65.
4	37.	46.	59.	64.	65.

****** Results for DSTEBZ(I) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	6.00E-02	.23	.96	2.1	3.9
2	4.00E-02	.15	.51	1.1	2.0
3	0.00E+00	0.00E+00	2.00E-02	2.00E-02	2.00E-02
4	3.00E-02	.13	.50	1.1	1.9

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	3.65E+05	1.43E+06	5.55E+06	1.23E+07	2.17E+07
2	2.09E+05	7.87E+05	3.02E+06	6.62E+06	1.16E+07
3	1.72E+04	3.63E+04	7.31E+04	1.10E+05	1.43E+05
4	2.00E+05	8.11E+05	3.00E+06	6.43E+06	1.14E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	6.1	6.2	5.8	5.9	5.5
2	5.2	5.2	5.9	5.8	5.8
3	0.00E+00	0.00E+00	3.7	5.5	7.1
4	6.7	6.2	6.0	5.9	5.9

****** Results for DSTEBZ(V) ******

with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	1.00E-01	.33	1.3	2.9	4.9
2	5.00E-02	.18	.70	1.6	2.7
3	0.00E+00	1.00E-02	1.00E-02	2.00E-02	3.00E-02
4	4.00E-02	.21	.72	1.6	2.8

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	3.65E+05	1.42E+06	5.55E+06	1.23E+07	2.17E+07
2	2.09E+05	7.88E+05	3.02E+06	6.63E+06	1.16E+07
3	1.73E+04	3.63E+04	7.13E+04	1.11E+05	1.51E+05
4	2.00E+05	8.11E+05	3.00E+06	6.43E+06	1.14E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	3.7	4.3	4.2	4.2	4.4
2	4.2	4.4	4.3	4.2	4.2
3	0.00E+00	3.6	7.1	5.6	5.0
4	5.0	3.9	4.2	4.1	4.1

End of timing run
Total time used = 266.55 seconds

with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	7.00E-02	.23	.95	2.1	3.9
2	3.00E-02	.15	.52	1.1	2.0
3	0.00E+00	1.00E-02	1.00E-02	2.00E-02	2.00E-02
4	4.00E-02	.14	.52	1.1	1.9

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	3.65E+05	1.42E+06	5.55E+06	1.23E+07	2.17E+07
2	2.09E+05	7.88E+05	3.02E+06	6.63E+06	1.16E+07
3	1.73E+04	3.63E+04	7.13E+04	1.11E+05	1.51E+05
4	2.00E+05	8.11E+05	3.00E+06	6.43E+06	1.14E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	5.2	6.2	5.8	5.8	5.5
2	7.0	5.3	5.8	5.9	5.9
3	0.00E+00	3.6	7.1	5.6	7.5
4	5.0	5.8	5.8	6.1	5.9

****** Results for DSTEIN ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	1.00E-02	6.00E-02	.23	.51	.99
2	3.00E-02	.12	.93	2.8	6.4
3	3.00E-02	.18	1.2	3.7	8.3
4	2.00E-02	.13	.97	2.8	6.0

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	1.26E+05	5.01E+05	2.00E+06	4.50E+06	8.00E+06
2	6.18E+05	4.59E+06	3.57E+07	1.21E+08	2.86E+08
3	8.31E+05	6.32E+06	4.93E+07	1.65E+08	3.89E+08
4	7.20E+05	4.39E+06	3.90E+07	1.21E+08	2.70E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	13.	8.4	8.7	8.8	8.1
2	21.	38.	38.	43.	45.
3	28.	35.	41.	44.	47.
4	36.	34.	40.	43.	45.

****** Results for DSTEDC(N) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	1.00E-02	2.00E-02	5.00E-02	.11	.18
2	0.00E+00	1.00E-02	3.00E-02	5.00E-02	.11
3	0.00E+00	1.00E-02	5.00E-02	1.00E-01	.15
4	1.00E-02	0.00E+00	2.00E-02	4.00E-02	5.00E-02

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	4.56E+04	1.78E+05	6.50E+05	1.38E+06	2.42E+06
2	2.44E+04	9.38E+04	3.58E+05	7.45E+05	1.39E+06
3	3.71E+04	1.60E+05	5.86E+05	1.23E+06	2.03E+06
4	1.96E+04	5.93E+04	2.08E+05	4.11E+05	7.66E+05

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	4.6	8.9	13.	13.	13.
2	0.00E+00	9.4	12.	15.	13.
3	0.00E+00	16.	12.	12.	14.
4	2.0	0.00E+00	10.	10.	15.

****** Results for DSTEDC(I) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	2.00E-02	1.00E-01	.28	.66	1.3
2	1.00E-02	3.00E-02	.14	.26	.44
3	1.00E-02	2.00E-02	5.00E-02	9.00E-02	.16
4	1.00E-02	4.00E-02	.14	.25	.45

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	5.03E+05	2.42E+06	1.45E+07	4.36E+07	9.52E+07
2	2.82E+05	9.79E+05	4.77E+06	1.17E+07	2.52E+07
3	2.35E+05	5.13E+05	1.01E+06	9.13E+05	2.04E+06
4	2.56E+05	1.12E+06	4.79E+06	1.11E+07	2.42E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	25.	24.	52.	66.	72.
2	28.	33.	34.	45.	57.
3	23.	26.	20.	10.	13.
4	26.	28.	34.	44.	54.

****** Results for DSTEDC(V) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	2.00E-02	7.00E-02	.43	1.2	2.6
2	1.00E-02	3.00E-02	.23	.56	1.1
3	0.00E+00	4.00E-02	.15	.43	.87
4	1.00E-02	4.00E-02	.21	.54	1.1

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	7.53E+05	4.68E+06	3.41E+07	1.12E+08	2.54E+08
2	4.59E+05	2.27E+06	1.46E+07	4.52E+07	9.91E+07
3	3.60E+05	1.63E+06	1.07E+07	3.43E+07	7.23E+07
4	4.32E+05	2.45E+06	1.45E+07	4.37E+07	9.83E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	38.	67.	79.	95.	99.
2	46.	76.	63.	81.	90.
3	0.00E+00	41.	71.	80.	83.
4	43.	61.	69.	81.	89.

End of timing run
Total time used = 208.50 seconds

Timing the Nonsymmetric Eigenvalue Problem routines
DGEHRD, DHSEQR, DTREVC, and DHSEIN

LAPACK VERSION 2.0, released September 30, 1994

The following parameter values will be used:

Values of N :	50	100	200	300
Values of NB :	1	16	32	48
Values of NS :	4	6	8	12
Values of MAXB:	40	40	40	40
Values of LDA :	301	301	301	301

Minimum time a subroutine will be timed = .00 seconds

****** Results for DGEHRD ******

```
Timing the Nonsymmetric Eigenvalue Problem routines
   DGEHRD, DHSEQR, DTREVC, and DHSEIN

LAPACK VERSION 1.1, released March 31, 1993

The following parameter values will be used:
   Values of  N   :      50   100   200   300
   Values of  NB  :       1    16    32    48
   Values of  NS  :       4     6     8    12
   Values of  MAXB:      40    40    40    40
   Values of  LDA :     301   301   301   301

Minimum time a subroutine will be timed =      .00 seconds



****** Results for DGEHRD     ******
    line  1 with LDA =  301, NB =    1
    line  2 with LDA =  301, NB =   16
    line  3 with LDA =  301, NB =   32
    line  4 with LDA =  301, NB =   48

*** Time in seconds ***
      N      50       100       200       300
 Type
    1      1.00E-02  .11       .80       2.7
           2.00E-02 6.00E-02  .51       1.6
           1.00E-02 8.00E-02  .53       1.6
           2.00E-02  .11       .61       1.7

    3      1.00E-02 1.00E-01  .83       2.7
           2.00E-02 8.00E-02  .51       1.6
           1.00E-02 9.00E-02  .52       1.6
           2.00E-02  .11       .55       1.7

    4      2.00E-02  .12       .78       2.7
           1.00E-02 7.00E-02  .55       1.6
           1.00E-02 7.00E-02  .55       1.6
           2.00E-02  .12       .62       1.7

    6      1.00E-02  .11       .86       2.7
           1.00E-02 7.00E-02  .55       1.6
           2.00E-02 6.00E-02  .56       1.6
           2.00E-02 9.00E-02  .61       1.7


*** Number of floating-point operations ***
      N      50       100       200       300
 Type
    1      4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07

    3      4.15E+05 3.33E+06 2.66E+07 9.00E+07
```

```
    line  1 with LDA =  301, NB =    1
    line  2 with LDA =  301, NB =   16
    line  3 with LDA =  301, NB =   32
    line  4 with LDA =  301, NB =   48

*** Time in seconds ***
      N      50       100       200       300
 Type
    1      1.00E-02 7.00E-02  .80       2.6
           2.00E-02 4.00E-02  .40       1.2
           1.00E-02 5.00E-02  .44       1.3
           2.00E-02 6.00E-02  .47       1.4

    3      1.00E-02 7.00E-02  .80       2.7
           1.00E-02 6.00E-02  .41       1.2
           1.00E-02 5.00E-02  .42       1.3
           1.00E-02 7.00E-02  .47       1.4

    4      1.00E-02 6.00E-02  .77       2.6
           0.00E+00 7.00E-02  .39       1.2
           0.00E+00 6.00E-02  .41       1.3
           1.00E-02 7.00E-02  .48       1.3

    6      1.00E-02 7.00E-02  .74       2.6
           1.00E-02 6.00E-02  .40       1.2
           1.00E-02 6.00E-02  .45       1.3
           1.00E-02 8.00E-02  .47       1.4


*** Number of floating-point operations ***
      N      50       100       200       300
 Type
    1      4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07

    3      4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07

    4      4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07

    6      4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07
           4.15E+05 3.33E+06 2.66E+07 9.00E+07


*** Speed in megaflops ***
      N      50       100       200       300
 Type
```

```
          4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07

     4    4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07

     6    4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07
          4.15E+05 3.33E+06 2.66E+07 9.00E+07


*** Speed in megaflops ***
       N     50       100      200      300
  Type
     1       42.      30.      33.      33.
             21.      55.      52.      57.
             42.      42.      50.      55.
             21.      30.      44.      54.

     3       42.      33.      32.      34.
             21.      42.      52.      56.
             42.      37.      51.      56.
             21.      30.      48.      52.

     4       21.      28.      34.      33.
             42.      48.      48.      57.
             42.      48.      48.      55.
             21.      28.      43.      53.

     6       42.      30.      31.      33.
             42.      48.      48.      57.
             21.      55.      48.      56.
             21.      37.      44.      54.



****** Results for DHSEQR(E) ******
    line  1 with LDA =  301, NB  =    1, NS  =    4, MAXB=   40
    line  2 with LDA =  301, NB  =    1, NS  =    6, MAXB=   40
    line  3 with LDA =  301, NB  =    1, NS  =    8, MAXB=   40
    line  4 with LDA =  301, NB  =    1, NS  =   12, MAXB=   40

*** Time in seconds ***
       N     50       100      200      300
  Type
     1     6.00E-02  .31       1.8      6.2
           6.00E-02  .28       1.7      5.7
           7.00E-02  .31       1.6      5.7
            .14      .39       2.6      8.5

     3     7.00E-02  .29       1.9      6.1

     1       42.      48.      33.      35.
             21.      83.      67.      76.
             42.      67.      61.      69.
             21.      55.      57.      65.

     3       42.      48.      33.      33.
             42.      55.      65.      73.
             42.      67.      63.      69.
             42.      48.      57.      66.

     4       42.      55.      35.      34.
           0.00E+00   48.      68.      73.
           0.00E+00   55.      65.      70.
             42.      48.      56.      67.

     6       42.      48.      36.      34.
             42.      55.      67.      72.
             42.      55.      59.      71.
             42.      42.      57.      64.



****** Results for DHSEQR(E) ******
    line  1 with LDA =  301, NB  =    1, NS  =    4, MAXB=   40
    line  2 with LDA =  301, NB  =    1, NS  =    6, MAXB=   40
    line  3 with LDA =  301, NB  =    1, NS  =    8, MAXB=   40
    line  4 with LDA =  301, NB  =    1, NS  =   12, MAXB=   40

*** Time in seconds ***
       N     50       100      200      300
  Type
     1     4.00E-02  .18       .95      2.8
           4.00E-02  .19       1.0      3.1
           5.00E-02  .19       .97      3.0
           8.00E-02  .28       1.3      4.0

     3     4.00E-02  .16       .93      2.7
           4.00E-02  .16      1.00      3.1
           4.00E-02  .17       .96      2.9
           5.00E-02  .27       1.2      4.0

     4     3.00E-02  .16       .88      2.9
           4.00E-02  .17       .97      3.1
           3.00E-02  .15       .95      2.8
           7.00E-02  .22       1.2      3.8

     6     4.00E-02  .15       .80      2.5
           4.00E-02  .17       .83      2.8
           4.00E-02  .16       .84      2.7
           5.00E-02  .24       1.3      3.2


*** Number of floating-point operations ***
       N     50       100      200      300
  Type
```

```
          6.00E-02  .29      1.7      5.7
          6.00E-02  .29      1.7      5.4
          6.00E-02  .38      2.1      8.8

     4    6.00E-02  .27      1.9      5.8
          5.00E-02  .27      1.7      5.4
          5.00E-02  .24      1.7      5.4
          1.00E-01  .32      2.2      7.5

     6    6.00E-02  .26      1.6      5.3
          6.00E-02  .26      1.4      5.2
          5.00E-02  .25      1.5      5.3
          8.00E-02  .35      2.4      7.7


*** Number of floating-point operations ***
       N     50       100       200       300
  Type
     1     1.11E+06 8.11E+06 5.14E+07 1.71E+08
           1.29E+06 8.14E+06 5.00E+07 1.69E+08
           1.58E+06 8.29E+06 4.97E+07 1.67E+08
           2.60E+06 9.22E+06 5.95E+07 1.93E+08

     3     1.12E+06 7.14E+06 5.31E+07 1.68E+08
           1.16E+06 7.44E+06 5.00E+07 1.66E+08
           1.12E+06 7.81E+06 5.12E+07 1.62E+08
           1.24E+06 8.58E+06 5.09E+07 1.99E+08

     4     9.70E+05 6.80E+06 4.99E+07 1.65E+08
           1.08E+06 6.82E+06 5.16E+07 1.56E+08
           1.25E+06 6.81E+06 4.96E+07 1.56E+08
           1.73E+06 6.85E+06 5.29E+07 1.68E+08

     6     1.11E+06 6.66E+06 4.33E+07 1.47E+08
           1.16E+06 6.82E+06 4.22E+07 1.47E+08
           1.27E+06 6.77E+06 4.30E+07 1.53E+08
           1.45E+06 7.69E+06 5.38E+07 1.72E+08


*** Speed in megaflops ***
       N     50       100       200       300
  Type
     1     18.       26.       28.       27.
           21.       29.       30.       30.
           23.       27.       30.       29.
           19.       24.       23.       23.

     3     16.       25.       28.       28.
           19.       26.       30.       29.
           19.       27.       30.       30.
           21.       23.       24.       23.

     4     16.       25.       27.       28.
           22.       25.       31.       29.
           25.       28.       30.       29.
           17.       21.       24.       22.
```

```
     1     1.11E+06 7.58E+06 5.15E+07 1.69E+08
           1.29E+06 7.80E+06 5.02E+07 1.64E+08
           1.58E+06 8.27E+06 5.03E+07 1.65E+08
           2.36E+06 1.08E+07 5.72E+07 1.88E+08

     3     1.12E+06 7.00E+06 5.33E+07 1.65E+08
           1.12E+06 6.95E+06 5.00E+07 1.67E+08
           1.49E+06 7.09E+06 5.11E+07 1.63E+08
           1.24E+06 9.96E+06 5.47E+07 1.85E+08

     4     9.70E+05 6.80E+06 4.95E+07 1.65E+08
           1.09E+06 6.82E+06 4.99E+07 1.64E+08
           1.27E+06 6.88E+06 5.21E+07 1.61E+08
           1.72E+06 7.49E+06 5.62E+07 1.75E+08

     6     1.11E+06 6.66E+06 4.33E+07 1.49E+08
           1.16E+06 6.82E+06 4.04E+07 1.48E+08
           1.25E+06 7.05E+06 4.33E+07 1.53E+08
           1.54E+06 9.09E+06 5.74E+07 1.44E+08


*** Speed in megaflops ***
       N     50       100       200       300
  Type
     1     28.       42.       54.       59.
           32.       41.       50.       53.
           32.       44.       52.       55.
           29.       39.       44.       47.

     3     28.       44.       57.       61.
           28.       43.       50.       54.
           37.       42.       53.       56.
           25.       37.       45.       46.

     4     32.       43.       56.       58.
           27.       40.       51.       53.
           42.       46.       55.       57.
           25.       34.       45.       46.

     6     28.       44.       54.       60.
           29.       40.       49.       52.
           31.       44.       52.       56.
           31.       38.       45.       45.


****** Results for DHSEQR(S) ******
    line  1 with LDA =  301, NB =    1, NS =    4, MAXB=   40
    line  2 with LDA =  301, NB =    1, NS =    6, MAXB=   40
    line  3 with LDA =  301, NB =    1, NS =    8, MAXB=   40
    line  4 with LDA =  301, NB =    1, NS =   12, MAXB=   40

*** Time in seconds ***
       N     50       100       200       300
  Type
```

6	18.	26.	27.	27.
	19.	26.	29.	28.
	25.	27.	29.	29.
	18.	22.	23.	22.

****** Results for DHSEQR(S) ******
line 1 with LDA = 301, NB = 1, NS = 4, MAXB= 40
line 2 with LDA = 301, NB = 1, NS = 6, MAXB= 40
line 3 with LDA = 301, NB = 1, NS = 8, MAXB= 40
line 4 with LDA = 301, NB = 1, NS = 12, MAXB= 40

*** Time in seconds ***

N / Type	50	100	200	300
1	6.00E-02	.39	2.5	10.
	6.00E-02	.36	2.5	9.8
	8.00E-02	.37	2.4	9.1
	.13	.51	3.6	13.
3	7.00E-02	.37	2.7	10.
	6.00E-02	.36	2.4	9.3
	5.00E-02	.34	2.5	8.8
	7.00E-02	.48	3.2	14.
4	7.00E-02	.34	2.5	9.7
	6.00E-02	.31	2.4	8.7
	7.00E-02	.31	2.3	8.6
	9.00E-02	.39	3.6	12.
6	6.00E-02	.32	2.3	8.5
	6.00E-02	.32	2.0	8.0
	6.00E-02	.29	2.0	8.1
	8.00E-02	.41	3.2	11.

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	1.39E+06	1.10E+07	7.30E+07	2.46E+08
	1.54E+06	1.06E+07	7.15E+07	2.43E+08
	1.84E+06	1.10E+07	7.11E+07	2.38E+08
	2.75E+06	1.20E+07	8.02E+07	2.64E+08
3	1.52E+06	1.01E+07	7.56E+07	2.47E+08
	1.54E+06	1.05E+07	7.19E+07	2.39E+08
	1.46E+06	1.08E+07	7.22E+07	2.33E+08
	1.60E+06	1.13E+07	7.18E+07	2.75E+08
4	1.33E+06	9.33E+06	7.20E+07	2.40E+08
	1.45E+06	9.27E+06	7.32E+07	2.27E+08
	1.61E+06	9.23E+06	6.98E+07	2.24E+08
	2.10E+06	9.40E+06	7.55E+07	2.38E+08

1	4.00E-02	.20	1.2	3.7
	4.00E-02	.23	1.4	4.2
	5.00E-02	.22	1.3	4.1
	8.00E-02	.33	1.7	5.7
3	4.00E-02	.18	1.2	3.7
	4.00E-02	.21	1.3	4.5
	5.00E-02	.19	1.3	4.2
	5.00E-02	.26	1.6	6.0
4	3.00E-02	.18	1.2	3.7
	4.00E-02	.20	1.3	4.3
	4.00E-02	.19	1.3	4.0
	7.00E-02	.25	1.8	5.7
6	4.00E-02	.17	1.0	3.3
	4.00E-02	.20	1.1	3.9
	4.00E-02	.20	1.1	3.8
	6.00E-02	.28	1.6	4.6

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	1.39E+06	1.03E+07	7.34E+07	2.45E+08
	1.53E+06	1.05E+07	7.07E+07	2.34E+08
	1.84E+06	1.07E+07	7.13E+07	2.34E+08
	2.55E+06	1.37E+07	7.83E+07	2.57E+08
3	1.52E+06	1.01E+07	7.61E+07	2.42E+08
	1.51E+06	9.83E+06	7.21E+07	2.39E+08
	1.86E+06	1.00E+07	7.20E+07	2.34E+08
	1.60E+06	1.18E+07	7.62E+07	2.60E+08
4	1.33E+06	9.33E+06	7.20E+07	2.41E+08
	1.46E+06	9.26E+06	7.07E+07	2.35E+08
	1.63E+06	9.36E+06	7.25E+07	2.32E+08
	2.07E+06	1.01E+07	7.82E+07	2.52E+08
6	1.37E+06	8.80E+06	6.33E+07	2.17E+08
	1.46E+06	9.14E+06	5.88E+07	2.13E+08
	1.48E+06	9.30E+06	6.17E+07	2.19E+08
	1.79E+06	1.13E+07	7.65E+07	2.06E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	35.	51.	61.	66.
	38.	46.	52.	55.
	37.	49.	54.	58.
	32.	41.	47.	45.
3	38.	56.	61.	65.
	38.	47.	54.	53.
	37.	53.	57.	56.

6	1.37E+06	8.80E+06	6.32E+07	2.12E+08
	1.46E+06	9.14E+06	6.10E+07	2.14E+08
	1.52E+06	8.73E+06	6.12E+07	2.20E+08
	1.69E+06	9.67E+06	7.28E+07	2.36E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	23.	28.	29.	24.
	26.	30.	29.	25.
	23.	30.	29.	26.
	21.	23.	22.	20.
3	22.	27.	28.	24.
	26.	29.	29.	26.
	29.	32.	29.	27.
	23.	24.	22.	20.
4	19.	27.	28.	25.
	24.	30.	30.	26.
	23.	30.	31.	26.
	23.	24.	21.	20.
6	23.	27.	28.	25.
	24.	29.	30.	27.
	25.	30.	30.	27.
	21.	24.	22.	21.

****** Results for DHSEQR(V) ******

line 1 with LDA = 301, NB = 1, NS = 4, MAXB= 40
line 2 with LDA = 301, NB = 1, NS = 6, MAXB= 40
line 3 with LDA = 301, NB = 1, NS = 8, MAXB= 40
line 4 with LDA = 301, NB = 1, NS = 12, MAXB= 40

*** Time in seconds ***

N / Type	50	100	200	300
1	1.00E-01	.69	4.9	18.
	8.00E-02	.63	4.6	17.
	1.00E-01	.65	4.6	17.
	.20	.82	6.3	23.
3	.12	.63	4.9	18.
	9.00E-02	.60	4.6	17.
	9.00E-02	.67	4.5	16.
	1.00E-01	.77	5.7	24.
4	8.00E-02	.59	4.9	17.
	1.00E-01	.54	4.9	16.
	1.00E-01	.53	4.6	16.
	.14	.62	6.0	21.

	32.	45.	47.	43.
4	44.	52.	62.	66.
	37.	46.	53.	55.
	41.	49.	55.	58.
	30.	41.	44.	44.
6	34.	52.	61.	65.
	36.	46.	55.	55.
	37.	47.	56.	58.
	30.	40.	47.	45.

****** Results for DHSEQR(V) ******

line 1 with LDA = 301, NB = 1, NS = 4, MAXB= 40
line 2 with LDA = 301, NB = 1, NS = 6, MAXB= 40
line 3 with LDA = 301, NB = 1, NS = 8, MAXB= 40
line 4 with LDA = 301, NB = 1, NS = 12, MAXB= 40

*** Time in seconds ***

N / Type	50	100	200	300
1	5.00E-02	.32	2.1	6.8
	6.00E-02	.38	2.4	8.0
	7.00E-02	.36	2.4	8.4
	.14	.50	3.4	14.
3	5.00E-02	.31	2.2	6.8
	7.00E-02	.34	2.4	8.3
	6.00E-02	.33	2.4	8.7
	7.00E-02	.44	3.3	14.
4	5.00E-02	.29	2.0	6.6
	5.00E-02	.33	2.4	7.9
	6.00E-02	.30	2.4	8.2
	9.00E-02	.38	3.4	15.
6	5.00E-02	.26	1.7	6.1
	6.00E-02	.32	2.0	7.2
	5.00E-02	.31	2.0	7.9
	8.00E-02	.43	3.2	11.

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	2.58E+06	1.98E+07	1.44E+08	4.85E+08
	2.81E+06	2.00E+07	1.38E+08	4.61E+08
	3.28E+06	2.02E+07	1.38E+08	4.59E+08
	4.34E+06	2.52E+07	1.50E+08	5.00E+08
3	2.82E+06	1.94E+07	1.49E+08	4.78E+08
	2.79E+06	1.88E+07	1.41E+08	4.70E+08
	3.39E+06	1.89E+07	1.40E+08	4.59E+08

```
      6     9.00E-02  .54      4.4      15.
            1.00E-01  .53      4.1      14.
            9.00E-02  .48      3.8      15.
             .12      .67      5.7      21.


*** Number of floating-point operations ***
        N     50       100       200       300
   Type
      1     2.58E+06 2.11E+07 1.43E+08 4.85E+08
            2.81E+06 2.03E+07 1.40E+08 4.78E+08
            3.28E+06 2.07E+07 1.38E+08 4.66E+08
            4.63E+06 2.21E+07 1.54E+08 5.15E+08

      3     2.82E+06 1.94E+07 1.48E+08 4.88E+08
            2.84E+06 1.99E+07 1.40E+08 4.70E+08
            2.64E+06 2.04E+07 1.40E+08 4.57E+08
            2.81E+06 2.09E+07 1.38E+08 5.35E+08

      4     2.47E+06 1.80E+07 1.41E+08 4.73E+08
            2.66E+06 1.77E+07 1.43E+08 4.46E+08
            2.92E+06 1.74E+07 1.36E+08 4.40E+08
            3.67E+06 1.74E+07 1.45E+08 4.63E+08

      6     2.54E+06 1.69E+07 1.24E+08 4.18E+08
            2.68E+06 1.74E+07 1.19E+08 4.22E+08
            2.73E+06 1.64E+07 1.19E+08 4.31E+08
            2.89E+06 1.78E+07 1.40E+08 4.60E+08


*** Speed in megaflops ***
        N     50       100       200       300
   Type
      1     26.       31.       29.       27.
            35.       32.       30.       28.
            33.       32.       30.       28.
            23.       27.       24.       22.

      3     24.       31.       30.       27.
            32.       33.       31.       28.
            29.       30.       31.       28.
            28.       27.       24.       22.

      4     31.       30.       29.       27.
            27.       33.       29.       28.
            29.       33.       29.       28.
            26.       28.       24.       22.

      6     28.       31.       28.       28.
            27.       33.       29.       30.
            30.       34.       31.       29.
            24.       27.       25.       22.
```

```
            2.82E+06 2.19E+07 1.46E+08 5.07E+08

      4     2.47E+06 1.80E+07 1.41E+08 4.76E+08
            2.69E+06 1.76E+07 1.38E+08 4.63E+08
            2.95E+06 1.77E+07 1.41E+08 4.54E+08
            3.61E+06 1.88E+07 1.50E+08 4.91E+08

      6     2.54E+06 1.69E+07 1.24E+08 4.28E+08
            2.68E+06 1.74E+07 1.15E+08 4.18E+08
            2.66E+06 1.75E+07 1.20E+08 4.30E+08
            3.08E+06 2.09E+07 1.47E+08 4.01E+08


*** Speed in megaflops ***
        N     50       100       200       300
   Type
      1     52.       62.       70.       72.
            47.       53.       58.       58.
            47.       56.       58.       54.
            31.       50.       44.       36.

      3     56.       62.       69.       70.
            40.       55.       58.       57.
            57.       57.       59.       53.
            40.       50.       45.       35.

      4     49.       62.       69.       72.
            54.       53.       58.       58.
            49.       59.       59.       55.
            40.       49.       45.       34.

      6     51.       65.       71.       70.
            45.       54.       58.       58.
            53.       57.       61.       54.
            39.       49.       45.       37.


****** Results for DTREVC(L) ******
    with LDA =  301

*** Time in seconds ***
        N     50       100       200       300
   Type
      1     0.00E+00 2.00E-02  .11       .34
      3     0.00E+00 1.00E-02  .11       .33
      4     0.00E+00 2.00E-02  .12       .32
      6     1.00E-02 2.00E-02  .11       .32

*** Number of floating-point operations ***
        N     50       100       200       300
   Type
      1     5.04E+04 4.04E+05 2.97E+06 9.70E+06
      3     5.91E+04 4.09E+05 2.97E+06 9.70E+06
      4     5.98E+04 4.09E+05 2.97E+06 9.70E+06
```

****** Results for DTREVC(L) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	1.00E-02	3.00E-02	.15	.41
3	1.00E-02	4.00E-02	.15	.40
4	0.00E+00	3.00E-02	.14	.38
6	0.00E+00	2.00E-02	.15	.42

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	5.04E+04	4.04E+05	2.97E+06	9.70E+06
3	5.91E+04	4.09E+05	2.97E+06	9.70E+06
4	6.01E+04	4.09E+05	2.97E+06	9.70E+06
6	5.94E+04	4.07E+05	2.97E+06	9.70E+06

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	5.0	13.	20.	24.
3	5.9	10.	20.	24.
4	0.00E+00	14.	21.	26.
6	0.00E+00	20.	20.	23.

****** Results for DTREVC(R) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	1.00E-02	3.00E-02	.18	.48
3	0.00E+00	3.00E-02	.18	.49
4	1.00E-02	4.00E-02	.19	.49
6	1.00E-02	4.00E-02	.17	.48

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	5.04E+04	4.03E+05	2.97E+06	9.69E+06
3	5.88E+04	4.08E+05	2.97E+06	9.70E+06
4	6.00E+04	4.08E+05	2.97E+06	9.70E+06
6	5.92E+04	4.06E+05	2.97E+06	9.70E+06

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	5.0	13.	16.	20.
3	0.00E+00	14.	17.	20.
4	6.0	10.	16.	20.
6	5.9	10.	17.	20.

6	5.94E+04	4.07E+05	2.97E+06	9.70E+06

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	0.00E+00	20.	27.	29.
3	0.00E+00	41.	27.	29.
4	0.00E+00	20.	25.	30.
6	5.9	20.	27.	30.

****** Results for DTREVC(R) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	1.00E-02	2.00E-02	.13	.30
3	1.00E-02	2.00E-02	.12	.30
4	1.00E-02	2.00E-02	1.00E-01	.31
6	0.00E+00	2.00E-02	.11	.31

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	5.04E+04	4.03E+05	2.97E+06	9.70E+06
3	5.88E+04	4.08E+05	2.97E+06	9.70E+06
4	5.96E+04	4.08E+05	2.97E+06	9.70E+06
6	5.92E+04	4.07E+05	2.97E+06	9.70E+06

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	5.0	20.	23.	32.
3	5.9	20.	25.	32.
4	6.0	20.	30.	31.
6	0.00E+00	20.	27.	31.

****** Results for DHSEIN(L) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	2.00E-02	.14	.99	3.3
3	1.00E-02	.14	1.0	3.4
4	1.00E-02	.13	1.1	3.4
6	2.00E-02	.13	1.00	3.3

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	2.64E+05	3.60E+06	3.07E+07	1.05E+08

****** Results for DHSEIN(L) ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	2.00E-02	.17	1.3	6.4
3	3.00E-02	.18	1.3	6.4
4	2.00E-02	.15	1.3	6.5
6	3.00E-02	.19	1.3	6.3

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	2.64E+05	3.60E+06	3.07E+07	1.05E+08
3	4.67E+05	3.89E+06	3.10E+07	1.06E+08
4	4.94E+05	3.92E+06	3.06E+07	1.06E+08
6	4.82E+05	3.77E+06	3.10E+07	1.06E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	13.	21.	24.	16.
3	16.	22.	24.	17.
4	25.	26.	23.	16.
6	16.	20.	25.	17.

****** Results for DHSEIN(R) ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	3.00E-02	.19	1.4	6.6
3	2.00E-02	.16	1.4	6.4
4	2.00E-02	.17	1.4	6.7
6	2.00E-02	.19	1.4	6.5

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	2.64E+05	3.25E+06	2.75E+07	9.41E+07
3	4.17E+05	3.47E+06	2.78E+07	9.50E+07
4	4.41E+05	3.47E+06	2.74E+07	9.48E+07
6	4.28E+05	3.41E+06	2.81E+07	9.59E+07

*** Speed in megaflops ***

N / Type	50	100	200	300
1	8.8	17.	20.	14.
3	21.	22.	20.	15.
3	4.67E+05	3.89E+06	3.10E+07	1.06E+08
4	4.84E+05	3.92E+06	3.07E+07	1.06E+08
6	4.82E+05	3.81E+06	3.10E+07	1.06E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	13.	26.	31.	31.
3	47.	28.	31.	31.
4	48.	30.	29.	31.
6	24.	29.	31.	32.

****** Results for DHSEIN(R) ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	2.00E-02	.15	1.1	3.4
3	2.00E-02	.12	1.0	3.3
4	2.00E-02	.13	1.0	3.5
6	1.00E-02	.13	1.1	3.4

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	2.64E+05	3.25E+06	2.75E+07	9.44E+07
3	4.17E+05	3.47E+06	2.78E+07	9.50E+07
4	4.33E+05	3.47E+06	2.75E+07	9.48E+07
6	4.28E+05	3.44E+06	2.81E+07	9.59E+07

*** Speed in megaflops ***

N / Type	50	100	200	300
1	13.	22.	26.	27.
3	21.	29.	27.	29.
4	22.	27.	26.	27.
6	43.	26.	27.	29.

****** Results for ORTHES ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	1.00E-02	6.00E-02	.67	2.4
3	1.00E-02	7.00E-02	.68	2.4
4	1.00E-02	7.00E-02	.74	2.4
6	1.00E-02	7.00E-02	.67	2.4

*** Number of floating-point operations ***

N / Type	50	100	200	300

4	22.	20.	20.	14.
6	21.	18.	21.	15.

****** Results for ORTHES ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	1.00E-02	1.00E-01	.83	3.6
3	1.00E-02	9.00E-02	.76	3.5
4	1.00E-02	1.00E-01	.88	3.6
6	1.00E-02	.11	.84	3.5

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	4.15E+05	3.33E+06	2.66E+07	9.00E+07
3	4.15E+05	3.33E+06	2.66E+07	9.00E+07
4	4.15E+05	3.33E+06	2.66E+07	9.00E+07
6	4.15E+05	3.33E+06	2.66E+07	9.00E+07

*** Speed in megaflops ***

N / Type	50	100	200	300
1	42.	33.	32.	25.
3	42.	37.	35.	25.
4	42.	33.	30.	25.
6	42.	30.	32.	26.

****** Results for HQR ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	4.00E-02	.24	1.5	4.8
3	4.00E-02	.20	1.6	4.9
4	3.00E-02	.21	1.6	4.8
6	3.00E-02	.15	1.0	4.1

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	1.13E+06	8.34E+06	5.51E+07	1.78E+08
3	1.05E+06	7.66E+06	5.99E+07	1.83E+08
4	1.01E+06	7.24E+06	5.59E+07	1.74E+08
6	7.45E+05	5.31E+06	3.69E+07	1.46E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	1.13E+02	64.	66.	69.
3	53.	59.	62.	67.
4	51.	60.	64.	67.
6	37.	66.	63.	68.

****** Results for HQR2 ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	6.00E-02	.40	2.5	8.3
3	5.00E-02	.36	2.6	8.2
4	4.00E-02	.34	2.7	8.2
6	5.00E-02	.30	2.2	7.5

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	4.15E+05	3.33E+06	2.66E+07	9.00E+07
3	4.15E+05	3.33E+06	2.66E+07	9.00E+07
4	4.15E+05	3.33E+06	2.66E+07	9.00E+07
6	4.15E+05	3.33E+06	2.66E+07	9.00E+07

*** Speed in megaflops ***

N / Type	50	100	200	300
1	42.	55.	40.	38.
3	42.	48.	39.	38.
4	42.	48.	36.	37.
6	42.	48.	40.	38.

****** Results for HQR ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	1.00E-02	.13	.83	2.6
3	2.00E-02	.13	.96	2.7
4	2.00E-02	.12	.87	2.6
6	2.00E-02	8.00E-02	.59	2.2

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	1.13E+06	8.34E+06	5.51E+07	1.78E+08
3	1.05E+06	7.66E+06	5.99E+07	1.83E+08
4	1.01E+06	7.24E+06	5.59E+07	1.74E+08
6	7.45E+05	5.31E+06	3.69E+07	1.46E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	1.13E+02	64.	66.	69.
3	53.	59.	62.	67.
4	51.	60.	64.	67.
6	37.	66.	63.	68.

****** Results for HQR2 ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	6.00E-02	.40	2.5	8.3
3	5.00E-02	.36	2.6	8.2
4	4.00E-02	.34	2.7	8.2
6	5.00E-02	.30	2.2	7.5

```
     1      28.      35.      38.      37.
     3      26.      38.      37.      37.
     4      34.      34.      34.      36.
     6      25.      35.      37.      36.


****** Results for HQR2      ******
    with LDA =  301

*** Time in seconds ***
       N      50       100      200      300
  Type
     1     9.00E-02  .68      4.8      20.
     3     9.00E-02  .64      4.9      20.
     4     8.00E-02  .56      4.7      19.
     6     8.00E-02  .53      4.2      18.

*** Number of floating-point operations ***
       N      50       100      200      300
  Type
     1     2.86E+06 2.50E+07 1.74E+08 5.71E+08
     3     2.87E+06 2.36E+07 1.82E+08 5.85E+08
     4     2.66E+06 2.11E+07 1.80E+08 5.71E+08
     6     2.95E+06 1.96E+07 1.53E+08 5.26E+08

*** Speed in megaflops ***
       N      50       100      200      300
  Type
     1      32.      37.      37.      29.
     3      32.      37.      37.      29.
     4      33.      38.      38.      29.
     6      37.      37.      36.      30.


****** Results for INVIT      ******
    with LDA =  301

*** Time in seconds ***
       N      50       100      200      300
  Type
     1     2.00E-02  .20      1.4      6.5
     3     3.00E-02  .19      1.4      6.3
     4     2.00E-02  .18      1.2      7.2
     6     3.00E-02  .19      1.4      6.6

*** Number of floating-point operations ***
       N      50       100      200      300
  Type
     1     2.66E+05 3.02E+06 2.42E+07 8.25E+07
     3     4.02E+05 3.17E+06 2.48E+07 8.29E+07
     4     4.16E+05 3.17E+06 2.44E+07 8.30E+07
     6     3.97E+05 3.17E+06 2.47E+07 8.40E+07

*** Speed in megaflops ***
```

```
*** Number of floating-point operations ***
       N      50       100      200      300
  Type
     1     2.86E+06 2.50E+07 1.74E+08 5.71E+08
     3     2.87E+06 2.36E+07 1.82E+08 5.85E+08
     4     2.66E+06 2.11E+07 1.80E+08 5.71E+08
     6     2.95E+06 1.96E+07 1.53E+08 5.26E+08

*** Speed in megaflops ***
       N      50       100      200      300
  Type
     1      48.      62.      69.      69.
     3      57.      66.      70.      71.
     4      67.      62.      68.      70.
     6      59.      65.      68.      70.


****** Results for INVIT      ******
    with LDA =  301

*** Time in seconds ***
       N      50       100      200      300
  Type
     1     1.00E-02  .12      1.0      3.3
     3     2.00E-02  .13      1.0      3.3
     4     3.00E-02  .12      1.0      3.3
     6     1.00E-02  .13      1.0      3.3

*** Number of floating-point operations ***
       N      50       100      200      300
  Type
     1     2.66E+05 3.02E+06 2.42E+07 8.25E+07
     3     4.02E+05 3.17E+06 2.48E+07 8.29E+07
     4     4.16E+05 3.17E+06 2.44E+07 8.30E+07
     6     3.97E+05 3.17E+06 2.47E+07 8.40E+07

*** Speed in megaflops ***
       N      50       100      200      300
  Type
     1      27.      25.      24.      25.
     3      20.      24.      25.      25.
     4      14.      26.      24.      25.
     6      40.      24.      24.      25.


End of timing run
Total time used =       597.18 seconds
```

N	50	100	200	300
Type				
1	13.	15.	17.	13.
3	13.	17.	17.	13.
4	21.	18.	20.	11.
6	13.	17.	18.	13.

End of timing run
Total time used = 1086.37 seconds

Timing the Generalized Eigenvalue Problem routines
DGGHRD, DHGEQZ, and DTGEVC

LAPACK VERSION 1.1, released March 31, 1993

The following parameter values will be used:

Values of N :	50	100	150	200
Values of NB :	10	10	10	10
Values of NS :	2	2	4	4
Values of MAXB:	200	2	4	4
Values of NBMIN:	200	200	200	10
Values of MINBL:	200	200	200	10
Values of LDA :	201	201	201	201

Minimum time a subroutine will be timed = .00 seconds

****** Results for DGGHRD(N) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200
1	4.00E-02	.26	.93	2.4
2	5.00E-02	.27	.91	2.3
3	3.00E-02	.24	.89	2.4
4	4.00E-02	.25	.91	2.3

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.14E+06	9.21E+06	3.12E+07	7.42E+07
2	1.14E+06	9.21E+06	3.12E+07	7.42E+07
3	1.14E+06	9.21E+06	3.12E+07	7.42E+07
4	1.14E+06	9.21E+06	3.12E+07	7.42E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	28.	35.	34.	31.
2	23.	34.	34.	32.
3	38.	38.	35.	30.
4	28.	37.	34.	32.

****** Results for DGGHRD(Q) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200
1	6.00E-02	.34	1.3	3.5
2	5.00E-02	.35	1.3	3.5

Timing the Generalized Eigenvalue Problem routines
DGGHRD, DHGEQZ, and DTGEVC

LAPACK VERSION 2.0, released September 30, 1994

The following parameter values will be used:

Values of N :	50	100	150	200
Values of NB :	10	10	10	10
Values of NS :	2	2	4	4
Values of MAXB:	200	2	4	4
Values of NBMIN:	200	200	200	10
Values of MINBL:	200	200	200	10
Values of LDA :	201	201	201	201

Minimum time a subroutine will be timed = .00 seconds

****** Results for DGGHRD(N) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200
1	5.00E-02	.19	.63	1.4
2	3.00E-02	.18	.60	1.4
3	3.00E-02	.17	.63	1.4
4	3.00E-02	.19	.60	1.4

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.14E+06	9.21E+06	3.12E+07	7.42E+07
2	1.14E+06	9.21E+06	3.12E+07	7.42E+07
3	1.14E+06	9.21E+06	3.12E+07	7.42E+07
4	1.14E+06	9.21E+06	3.12E+07	7.42E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	23.	48.	50.	53.
2	38.	51.	52.	55.
3	38.	54.	50.	52.
4	38.	48.	52.	52.

****** Results for DGGHRD(Q) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200
1	4.00E-02	.25	.85	2.1
2	4.00E-02	.24	.87	2.1

3	5.00E-02	.35	1.3	3.4
4	5.00E-02	.36	1.3	3.3

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.49E+06	1.21E+07	4.12E+07	9.78E+07
2	1.49E+06	1.21E+07	4.12E+07	9.78E+07
3	1.49E+06	1.21E+07	4.12E+07	9.78E+07
4	1.49E+06	1.21E+07	4.12E+07	9.78E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	25.	36.	32.	28.
2	30.	35.	32.	28.
3	30.	35.	32.	28.
4	30.	34.	32.	29.

****** Results for DGGHRD(Z) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200
1	5.00E-02	.34	1.2	2.9
2	5.00E-02	.34	1.2	3.1
3	4.00E-02	.32	1.2	3.1
4	5.00E-02	.34	1.1	2.9

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.49E+06	1.21E+07	4.12E+07	9.78E+07
2	1.49E+06	1.21E+07	4.12E+07	9.78E+07
3	1.49E+06	1.21E+07	4.12E+07	9.78E+07
4	1.49E+06	1.21E+07	4.12E+07	9.78E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	30.	36.	35.	34.
2	30.	36.	35.	31.
3	37.	38.	34.	32.
4	30.	36.	36.	34.

****** Results for DGGHRD(Q,Z) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200

3	4.00E-02	.25	.87	2.0
4	3.00E-02	.27	.86	2.1

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.49E+06	1.21E+07	4.12E+07	9.78E+07
2	1.49E+06	1.21E+07	4.12E+07	9.78E+07
3	1.49E+06	1.21E+07	4.12E+07	9.78E+07
4	1.49E+06	1.21E+07	4.12E+07	9.78E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	37.	48.	48.	47.
2	37.	51.	47.	47.
3	37.	48.	47.	48.
4	50.	45.	48.	47.

****** Results for DGGHRD(Z) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200
1	4.00E-02	.22	.80	1.8
2	3.00E-02	.25	.79	1.8
3	4.00E-02	.25	.80	1.9
4	4.00E-02	.25	.78	1.8

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.49E+06	1.21E+07	4.12E+07	9.78E+07
2	1.49E+06	1.21E+07	4.12E+07	9.78E+07
3	1.49E+06	1.21E+07	4.12E+07	9.78E+07
4	1.49E+06	1.21E+07	4.12E+07	9.78E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	37.	55.	51.	53.
2	50.	48.	52.	53.
3	37.	48.	51.	52.
4	37.	48.	53.	53.

****** Results for DGGHRD(Q,Z) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N / Type	50	100	150	200

1	6.00E-02	.46	1.6	4.5
2	6.00E-02	.44	1.6	4.5
3	8.00E-02	.44	1.6	4.0
4	7.00E-02	.42	1.5	4.1

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	1.84E+06	1.50E+07	5.11E+07	1.21E+08
2	1.84E+06	1.50E+07	5.11E+07	1.21E+08
3	1.84E+06	1.50E+07	5.11E+07	1.21E+08
4	1.84E+06	1.50E+07	5.11E+07	1.21E+08

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	31.	33.	32.	27.
2	31.	34.	32.	27.
3	23.	34.	32.	31.
4	26.	36.	34.	30.

****** Results for DHGEQZ(E) ******
with LDA= 201

*** Time in seconds ***

N	50	100	150	200
Type				
1	7.00E-02	.37	1.1	2.5
2	9.00E-02	.40	1.2	2.5
3	6.00E-02	.40	1.2	2.8
4	7.00E-02	.36	1.2	2.6

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	1.57E+06	1.15E+07	3.78E+07	7.88E+07
2	1.86E+06	1.20E+07	3.91E+07	8.48E+07
3	1.55E+06	1.24E+07	3.82E+07	9.18E+07
4	1.78E+06	1.14E+07	3.73E+07	8.95E+07

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	22.	31.	34.	31.
2	21.	30.	33.	34.
3	26.	31.	32.	33.
4	25.	32.	31.	34.

****** Results for DHGEQZ(S) ******
with LDA= 201

*** Time in seconds ***

1	4.00E-02	.31	1.0	2.7
2	4.00E-02	.30	1.0	2.6
3	4.00E-02	.30	1.0	2.6
4	5.00E-02	.30	1.0	2.6

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	1.84E+06	1.50E+07	5.11E+07	1.21E+08
2	1.84E+06	1.50E+07	5.11E+07	1.21E+08
3	1.84E+06	1.50E+07	5.11E+07	1.21E+08
4	1.84E+06	1.50E+07	5.11E+07	1.21E+08

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	46.	48.	49.	45.
2	46.	50.	51.	47.
3	46.	50.	49.	46.
4	37.	50.	49.	47.

****** Results for DHGEQZ(E) ******
with LDA= 201

*** Time in seconds ***

N	50	100	150	200
Type				
1	5.00E-02	.24	.65	1.4
2	5.00E-02	.25	.67	1.4
3	4.00E-02	.24	.63	1.5
4	4.00E-02	.23	.71	1.5

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	1.53E+06	1.20E+07	3.61E+07	8.21E+07
2	1.86E+06	1.20E+07	3.93E+07	8.28E+07
3	1.55E+06	1.23E+07	3.53E+07	9.03E+07
4	1.74E+06	1.16E+07	3.92E+07	9.12E+07

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	31.	50.	56.	60.
2	37.	48.	59.	59.
3	39.	51.	56.	61.
4	44.	50.	55.	61.

****** Results for DHGEQZ(S) ******
with LDA= 201

*** Time in seconds ***

N	50	100	150	200
Type				
1	7.00E-02	.42	1.6	3.6
2	8.00E-02	.50	1.6	3.8
3	7.00E-02	.52	1.6	4.6
4	8.00E-02	.47	1.6	4.2

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	2.03E+06	1.55E+07	5.25E+07	1.11E+08
2	2.47E+06	1.66E+07	5.49E+07	1.21E+08
3	2.07E+06	1.69E+07	5.23E+07	1.32E+08
4	2.24E+06	1.54E+07	5.25E+07	1.26E+08

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	29.	37.	32.	31.
2	31.	33.	33.	32.
3	30.	33.	33.	28.
4	28.	33.	33.	30.

****** Results for DHGEQZ(Q) ******
with LDA= 201

*** Time in seconds ***

N	50	100	150	200
Type				
1	1.00E-01	.63	2.3	6.0
2	.12	.69	2.5	6.1
3	1.00E-01	.69	2.4	6.9
4	1.00E-01	.66	2.3	6.4

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	2.95E+06	2.29E+07	7.79E+07	1.66E+08
2	3.58E+06	2.46E+07	8.14E+07	1.80E+08
3	3.01E+06	2.50E+07	7.75E+07	1.96E+08
4	3.26E+06	2.27E+07	7.79E+07	1.88E+08

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	30.	36.	34.	28.
2	30.	36.	32.	29.
3	30.	36.	33.	28.
4	33.	34.	34.	29.

****** Results for DHGEQZ(Z) ******
with LDA= 201

N	50	100	150	200
Type				
1	4.00E-02	.28	.87	1.8
2	5.00E-02	.30	.93	1.9
3	4.00E-02	.30	.83	2.1
4	5.00E-02	.27	.92	2.1

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	1.98E+06	1.62E+07	5.11E+07	1.18E+08
2	2.47E+06	1.66E+07	5.58E+07	1.19E+08
3	2.07E+06	1.68E+07	4.96E+07	1.29E+08
4	2.19E+06	1.58E+07	5.50E+07	1.32E+08

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	49.	58.	59.	65.
2	49.	55.	60.	63.
3	52.	56.	60.	63.
4	44.	59.	60.	63.

****** Results for DHGEQZ(Q) ******
with LDA= 201

*** Time in seconds ***

N	50	100	150	200
Type				
1	5.00E-02	.40	1.2	2.6
2	6.00E-02	.44	1.3	2.8
3	6.00E-02	.42	1.2	2.9
4	6.00E-02	.39	1.3	3.1

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	2.87E+06	2.39E+07	7.58E+07	1.76E+08
2	3.58E+06	2.45E+07	8.27E+07	1.77E+08
3	3.00E+06	2.47E+07	7.35E+07	1.92E+08
4	3.18E+06	2.33E+07	8.16E+07	1.96E+08

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	57.	60.	62.	69.
2	60.	56.	63.	63.
3	50.	59.	62.	65.
4	53.	60.	64.	64.

****** Results for DHGEQZ(Z) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	9.00E-02	.70	2.3	5.9
2	.13	.69	2.6	6.4
3	1.00E-01	.71	2.4	6.9
4	1.00E-01	.68	2.4	6.6

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	2.95E+06	2.29E+07	7.79E+07	1.66E+08
2	3.58E+06	2.46E+07	8.14E+07	1.80E+08
3	3.01E+06	2.50E+07	7.75E+07	1.96E+08
4	3.26E+06	2.27E+07	7.79E+07	1.88E+08

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	33.	33.	33.	28.
2	28.	36.	32.	28.
3	30.	35.	32.	28.
4	33.	33.	32.	29.

****** Results for DHGEQZ(Q,Z) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	.12	.88	3.2	8.4
2	.15	.90	3.5	8.9
3	.12	.93	3.2	9.6
4	.13	.85	3.3	9.3

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	3.87E+06	3.03E+07	1.03E+08	2.20E+08
2	4.70E+06	3.25E+07	1.08E+08	2.39E+08
3	3.94E+06	3.30E+07	1.03E+08	2.60E+08
4	4.27E+06	3.00E+07	1.03E+08	2.49E+08

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	32.	34.	32.	26.
2	31.	36.	30.	27.
3	33.	36.	32.	27.
4	33.	35.	31.	27.

*** Time in seconds ***

Type \ N	50	100	150	200
1	6.00E-02	.39	1.2	2.7
2	6.00E-02	.43	1.3	2.8
3	6.00E-02	.43	1.2	3.0
4	6.00E-02	.39	1.3	3.0

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	2.87E+06	2.39E+07	7.58E+07	1.76E+08
2	3.58E+06	2.45E+07	8.27E+07	1.77E+08
3	3.00E+06	2.47E+07	7.35E+07	1.92E+08
4	3.18E+06	2.33E+07	8.16E+07	1.96E+08

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	48.	61.	62.	65.
2	60.	57.	63.	63.
3	50.	58.	63.	64.
4	53.	60.	63.	64.

****** Results for DHGEQZ(Q,Z) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	6.00E-02	.51	1.6	3.9
2	7.00E-02	.54	1.8	3.9
3	7.00E-02	.52	1.5	4.2
4	7.00E-02	.50	1.7	4.3

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	3.76E+06	3.16E+07	1.01E+08	2.34E+08
2	4.70E+06	3.25E+07	1.10E+08	2.35E+08
3	3.94E+06	3.27E+07	9.74E+07	2.55E+08
4	4.17E+06	3.08E+07	1.08E+08	2.61E+08

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	63.	62.	62.	60.
2	67.	60.	62.	60.
3	56.	63.	63.	60.
4	60.	62.	62.	61.

****** Results for DTGEVC(A,L) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	1.00E-02	5.00E-02	1.00E-01	.24
2	1.00E-02	5.00E-02	9.00E-02	.20
3	1.00E-02	4.00E-02	9.00E-02	.21
4	1.00E-02	4.00E-02	.11	.23

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	1.15E+05	7.94E+05	2.53E+06	5.86E+06
2	1.13E+05	7.83E+05	2.54E+06	5.84E+06
3	1.15E+05	7.94E+05	2.54E+06	5.86E+06
4	1.15E+05	7.95E+05	2.55E+06	5.84E+06

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	12.	16.	25.	24.
2	11.	16.	28.	29.
3	11.	20.	28.	28.
4	12.	20.	23.	25.

****** Results for DTGEVC(B,L) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	1.00E-02	8.00E-02	.20	.46
2	1.00E-02	7.00E-02	.18	.41
3	1.00E-02	7.00E-02	.20	.40
4	1.00E-02	6.00E-02	.22	.44

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	2.44E+05	1.81E+06	5.94E+06	1.39E+07
2	2.41E+05	1.80E+06	5.95E+06	1.39E+07
3	2.43E+05	1.81E+06	5.95E+06	1.39E+07
4	2.44E+05	1.81E+06	5.96E+06	1.39E+07

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	24.	23.	30.	30.
2	24.	26.	33.	34.
3	24.	26.	30.	35.
4	24.	30.	27.	32.

****** Results for DTGEVC(L,A) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	1.00E-02	3.00E-02	9.00E-02	.16
2	0.00E+00	3.00E-02	9.00E-02	.17
3	1.00E-02	2.00E-02	7.00E-02	.16
4	0.00E+00	2.00E-02	8.00E-02	.19

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	1.15E+05	7.93E+05	2.53E+06	5.86E+06
2	1.13E+05	7.83E+05	2.54E+06	5.84E+06
3	1.15E+05	7.94E+05	2.54E+06	5.86E+06
4	1.15E+05	7.95E+05	2.54E+06	5.84E+06

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	12.	26.	28.	37.
2	0.00E+00	26.	28.	34.
3	11.	40.	36.	37.
4	0.00E+00	40.	32.	31.

****** Results for DTGEVC(L,B) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	1.00E-02	6.00E-02	.17	.36
2	1.00E-02	6.00E-02	.17	.35
3	1.00E-02	4.00E-02	.18	.37
4	1.00E-02	5.00E-02	.15	.36

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	2.44E+05	1.81E+06	5.94E+06	1.39E+07
2	2.41E+05	1.80E+06	5.95E+06	1.39E+07
3	2.43E+05	1.81E+06	5.95E+06	1.39E+07
4	2.44E+05	1.81E+06	5.95E+06	1.39E+07

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	24.	30.	35.	39.
2	24.	30.	35.	40.
3	24.	45.	33.	38.
4	24.	36.	40.	39.

****** Results for DTGEVC(A,R) ******
with LDA= 201

*** Time in seconds ***

Type	N	50	100	150	200
	1	1.00E-02	5.00E-02	.12	.27
	2	1.00E-02	5.00E-02	.11	.25
	3	1.00E-02	5.00E-02	.11	.23
	4	1.00E-02	5.00E-02	.12	.24

*** Number of floating-point operations ***

Type	N	50	100	150	200
	1	1.13E+05	7.85E+05	2.51E+06	5.82E+06
	2	1.11E+05	7.73E+05	2.52E+06	5.80E+06
	3	1.12E+05	7.84E+05	2.52E+06	5.82E+06
	4	1.13E+05	7.86E+05	2.52E+06	5.80E+06

*** Speed in megaflops ***

Type	N	50	100	150	200
	1	11.	16.	21.	22.
	2	11.	15.	23.	23.
	3	11.	16.	23.	25.
	4	11.	16.	21.	24.

****** Results for DTGEVC(R,A) ******
with LDA= 201

*** Time in seconds ***

Type	N	50	100	150	200
	1	0.00E+00	2.00E-02	8.00E-02	.15
	2	1.00E-02	3.00E-02	8.00E-02	.16
	3	1.00E-02	3.00E-02	7.00E-02	.16
	4	1.00E-02	3.00E-02	8.00E-02	.15

*** Number of floating-point operations ***

Type	N	50	100	150	200
	1	1.39E+05	9.81E+05	3.16E+06	7.29E+06
	2	1.40E+05	9.90E+05	3.16E+06	7.35E+06
	3	1.38E+05	9.75E+05	3.15E+06	7.29E+06
	4	1.38E+05	9.77E+05	3.14E+06	7.34E+06

*** Speed in megaflops ***

Type	N	50	100	150	200
	1	0.00E+00	49.	40.	49.
	2	14.	33.	39.	46.
	3	14.	32.	45.	46.
	4	14.	33.	39.	49.

****** Results for DTGEVC(B,R) ******
with LDA= 201

*** Time in seconds ***

Type	N	50	100	150	200
	1	2.00E-02	9.00E-02	.25	.64
	2	2.00E-02	9.00E-02	.26	.64
	3	2.00E-02	9.00E-02	.26	.57
	4	1.00E-02	8.00E-02	.27	.61

*** Number of floating-point operations ***

Type	N	50	100	150	200
	1	2.42E+05	1.80E+06	5.92E+06	1.39E+07
	2	2.39E+05	1.79E+06	5.93E+06	1.39E+07
	3	2.41E+05	1.80E+06	5.93E+06	1.39E+07
	4	2.42E+05	1.80E+06	5.94E+06	1.39E+07

*** Speed in megaflops ***

Type	N	50	100	150	200
	1	12.	20.	24.	22.
	2	12.	20.	23.	22.
	3	12.	20.	23.	24.

****** Results for DTGEVC(R,B) ******
with LDA= 201

*** Time in seconds ***

Type	N	50	100	150	200
	1	1.00E-02	6.00E-02	.20	.44
	2	1.00E-02	6.00E-02	.20	.43
	3	1.00E-02	6.00E-02	.20	.41
	4	1.00E-02	6.00E-02	.19	.40

*** Number of floating-point operations ***

Type	N	50	100	150	200
	1	2.68E+05	2.00E+06	6.57E+06	1.54E+07
	2	2.68E+05	2.00E+06	6.57E+06	1.54E+07
	3	2.67E+05	1.99E+06	6.56E+06	1.54E+07
	4	2.67E+05	1.99E+06	6.55E+06	1.54E+07

*** Speed in megaflops ***

Type	N	50	100	150	200
	1	27.	33.	33.	35.
	2	27.	33.	33.	36.
	3	27.	33.	33.	37.

```
     4      24.       23.       22.       23.


****** Results for QZHES(F)     ******
    with    LDA=  201

*** Time in seconds ***
       N      50       100       150       200
  Type
     1      5.00E-02  .35       1.1       2.9
     2      5.00E-02  .34       1.1       3.0
     3      4.00E-02  .33       1.1       2.8
     4      5.00E-02  .35       1.2       2.8

*** Number of floating-point operations ***
       N      50       100       150       200
  Type
     1      1.33E+06 1.07E+07 3.60E+07 8.53E+07
     2      1.33E+06 1.07E+07 3.60E+07 8.53E+07
     3      1.33E+06 1.07E+07 3.60E+07 8.53E+07
     4      1.33E+06 1.07E+07 3.60E+07 8.53E+07

*** Speed in megaflops ***
       N      50       100       150       200
  Type
     1      27.       30.       32.       30.
     2      27.       31.       32.       28.
     3      33.       32.       32.       30.
     4      27.       30.       30.       30.


****** Results for QZHES(T)     ******
    with    LDA=  201

*** Time in seconds ***
       N      50       100       150       200
  Type
     1      5.00E-02  .42       1.4       3.7
     2      5.00E-02  .41       1.4       3.7
     3      5.00E-02  .43       1.5       3.7
     4      5.00E-02  .43       1.5       3.7

*** Number of floating-point operations ***
       N      50       100       150       200
  Type
     1      1.68E+06 1.36E+07 4.59E+07 1.09E+08
     2      1.68E+06 1.36E+07 4.59E+07 1.09E+08
     3      1.68E+06 1.36E+07 4.59E+07 1.09E+08
     4      1.68E+06 1.36E+07 4.59E+07 1.09E+08

*** Speed in megaflops ***
       N      50       100       150       200
  Type
     1      34.       32.       32.       29.
```

```
     4      27.       33.       34.       38.


****** Results for QZHES(F)     ******
    with    LDA=  201

*** Time in seconds ***
       N      50       100       150       200
  Type
     1      3.00E-02  .19       .69       1.7
     2      2.00E-02  .19       .69       1.7
     3      2.00E-02  .19       .70       1.6
     4      2.00E-02  .19       .71       1.6

*** Number of floating-point operations ***
       N      50       100       150       200
  Type
     1      1.33E+06 1.07E+07 3.60E+07 8.53E+07
     2      1.33E+06 1.07E+07 3.60E+07 8.53E+07
     3      1.33E+06 1.07E+07 3.60E+07 8.53E+07
     4      1.33E+06 1.07E+07 3.60E+07 8.53E+07

*** Speed in megaflops ***
       N      50       100       150       200
  Type
     1      44.       56.       52.       51.
     2      66.       56.       52.       50.
     3      66.       56.       51.       52.
     4      66.       56.       51.       52.


****** Results for QZHES(T)     ******
    with    LDA=  201

*** Time in seconds ***
       N      50       100       150       200
  Type
     1      2.00E-02  .24       .83       2.1
     2      3.00E-02  .24       .84       2.1
     3      2.00E-02  .27       .85       2.1
     4      2.00E-02  .26       .86       2.1

*** Number of floating-point operations ***
       N      50       100       150       200
  Type
     1      1.68E+06 1.36E+07 4.59E+07 1.09E+08
     2      1.68E+06 1.36E+07 4.59E+07 1.09E+08
     3      1.68E+06 1.36E+07 4.59E+07 1.09E+08
     4      1.68E+06 1.36E+07 4.59E+07 1.09E+08

*** Speed in megaflops ***
       N      50       100       150       200
  Type
     1      84.       57.       55.       51.
```

2	34.	33.	32.	29.
3	34.	32.	31.	29.
4	34.	32.	31.	29.

****** Results for QZIT(F) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	5.00E-02	.40	1.1	2.3
2	6.00E-02	.39	1.2	2.5
3	6.00E-02	.39	.99	2.6
4	4.00E-02	.37	1.1	2.6

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.93E+06	1.55E+07	4.78E+07	1.02E+08
2	2.33E+06	1.45E+07	5.16E+07	1.06E+08
3	2.06E+06	1.53E+07	4.41E+07	1.09E+08
4	2.41E+06	1.39E+07	4.63E+07	1.10E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
1	39.	39.	43.	43.
2	39.	37.	45.	42.
3	34.	39.	45.	42.
4	60.	38.	43.	42.

****** Results for QZIT(T) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	9.00E-02	.80	2.4	6.5
2	.12	.76	2.7	6.9
3	.13	.75	2.4	7.0
4	.11	.73	2.4	6.9

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	3.70E+06	3.19E+07	1.00E+08	2.29E+08
2	4.61E+06	3.04E+07	1.12E+08	2.38E+08
3	3.96E+06	3.17E+07	9.54E+07	2.42E+08
4	4.48E+06	2.85E+07	9.79E+07	2.40E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
2	56.	57.	55.	52.
3	84.	50.	54.	52.
4	84.	52.	53.	52.

****** Results for QZIT(F) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	3.00E-02	.21	.62	1.3
2	4.00E-02	.20	.65	1.3
3	4.00E-02	.20	.57	1.4
4	4.00E-02	.19	.62	1.4

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.93E+06	1.55E+07	4.78E+07	1.02E+08
2	2.33E+06	1.45E+07	5.16E+07	1.06E+08
3	2.06E+06	1.53E+07	4.41E+07	1.09E+08
4	2.41E+06	1.39E+07	4.63E+07	1.10E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
1	64.	74.	77.	77.
2	58.	72.	79.	80.
3	51.	77.	77.	79.
4	60.	73.	75.	78.

****** Results for QZIT(T) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	5.00E-02	.39	1.3	2.8
2	5.00E-02	.42	1.4	2.9
3	4.00E-02	.42	1.2	2.9
4	5.00E-02	.38	1.2	3.0

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	3.70E+06	3.19E+07	1.00E+08	2.29E+08
2	4.61E+06	3.04E+07	1.12E+08	2.38E+08
3	3.96E+06	3.17E+07	9.54E+07	2.42E+08
4	4.48E+06	2.85E+07	9.79E+07	2.40E+08

*** Speed in megaflops ***

N	50	100	150	200

```
 Type
    1      41.      40.      41.      35.
    2      38.      40.      41.      35.
    3      30.      42.      40.      34.
    4      41.      39.      41.      35.


****** Results for QZVEC       ******
   with    LDA=  201

*** Time in seconds ***
       N     50       100      150      200
  Type     :
    1      1.00E-02 7.00E-02  .19      .45
    2      1.00E-02 6.00E-02  .18      .46
    3      1.00E-02 6.00E-02  .20      .46
    4      0.00E+00 5.00E-02  .22      .43

*** Number of floating-point operations ***
       N     50       100      150      200
  Type
    1      2.58E+05 2.01E+06 6.72E+06 1.60E+07
    2      2.55E+05 1.98E+06 6.80E+06 1.60E+07
    3      2.56E+05 2.01E+06 6.81E+06 1.60E+07
    4      2.59E+05 2.03E+06 6.80E+06 1.59E+07

*** Speed in megaflops ***
       N     50       100      150      200
  Type
    1      26.      29.      35.      36.
    2      25.      33.      38.      35.
    3      26.      34.      34.      35.
    4      0.00E+00 41.      31.      37.


End of timing run
Total time used =       394.08 seconds
```

```
 Type
    1      74.      82.      78.      82.
    2      92.      72.      82.      81.
    3      99.      75.      82.      83.
    4      90.      75.      80.      81.


****** Results for QZVEC       ******
   with    LDA=  201

*** Time in seconds ***
       N     50       100      150      200
  Type
    1      1.00E-02 4.00E-02  .12      .29
    2      1.00E-02 3.00E-02  .12      .30
    3      0.00E+00 4.00E-02  .12      .28
    4      1.00E-02 3.00E-02  .12      .30

*** Number of floating-point operations ***
       N     50       100      150      200
  Type
    1      2.58E+05 2.01E+06 6.72E+06 1.60E+07
    2      2.55E+05 1.98E+06 6.80E+06 1.60E+07
    3      2.56E+05 2.01E+06 6.81E+06 1.60E+07
    4      2.59E+05 2.03E+06 6.80E+06 1.59E+07

*** Speed in megaflops ***
       N     50       100      150      200
  Type
    1      26.      50.      56.      55.
    2      25.      66.      57.      53.
    3      0.00E+00 50.      57.      57.
    4      26.      68.      57.      53.


End of timing run
Total time used =       222.71 seconds
```

```
 Timing the Singular Value Decomposition routines
    DGEBRD, DBDSQR, and DORGBR

 LAPACK VERSION 1.1, released March 31, 1993

 The following parameter values will be used:
    Values of  M   :      50    50   100   100   100   200   200
    Values of  N   :      50   100    50   100   200   100   200
    Values of  NB  :       1
    Values of  LDA :     201

 Minimum time a subroutine will be timed =       .00 seconds

 DTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   100, ITYPE=     2, IPAR=     1,              ISEED=(  317, 2762, 3941,
1361,
 DTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 3330, 1641, 2090,
25,
 DTIM26: LINSVD    returned INFO=   100.
       M=   200, N=   100, ITYPE=     2, IPAR=     1,              ISEED=(  933,  592, 3250,
17,
 DTIM26: LINSVD    retur[illegible]  200.
       M=   200, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 2293, 2637, 4069,
1457,


****** Results for DGEBRD    ******
    with LDA =  201, NB  =    1

*** Time in seconds ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
  Type
     1       1.00E-02   3.00E-02   3.00E-02   9.00E-02    .25        .23        .76
     2       1.00E-02   3.00E-02   2.00E-02   9.00E-02    .22        .19        .72
     3       1.00E-02   3.00E-02   3.00E-02   8.00E-02    .25        .24        .68
     4       1.00E-02   0.00E+00   3.00E-02   8.00E-02    .25        .21        .68

*** Number of floating-point operations ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
  Type
     1       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07
     2       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07
     3       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07
     4       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07

*** Speed in megaflops ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
  Type
     1        34.        28.        28.        30.        27.        29.        28.
     2        34.        28.        42.        30.        30.        35.        30.
     3        34.        28.        28.        34.        27.        28.        31.
     4        34.      0.00E+00     28.        34.        27.        32.        31.
```

```
 Timing the Singular Value Decomposition routines
    DGEBRD, DBDSQR, and DORGBR

 LAPACK VERSION 2.0, released September 30, 1994

 The following parameter values will be used:
    Values of  M   :      50    50   100   100   100   200   200
    Values of  N   :      50   100    50   100   200   100   200
    Values of  NB  :       1
    Values of  LDA :     201

 Minimum time a subroutine will be timed =       .00 seconds

 DTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   100, ITYPE=     2, IPAR=     1,              ISEED=(  317, 2762, 3941,
1361,
 DTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 3330, 1641, 2090,
25,
 DTIM26: LINSVD    returned INFO=   100.
       M=   200, N=   100, ITYPE=     2, IPAR=     1,              ISEED=(  933,  592, 3250,
17,
 DTIM26: LINSVD    returned INFO=   200.
       M=   200, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 2293, 2637, 4069,
1457,


****** Results for DGEBRD    ******
    with LDA =  201, NB  =    1

*** Time in seconds ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
  Type
     1       1.00E-02   2.00E-02   0.00E+00   5.00E-02    .19        .18        .64
     2       0.00E+00   2.00E-02   1.00E-02   4.00E-02    .19        .15        .65
     3       1.00E-02   2.00E-02   2.00E-02   4.00E-02    .20        .18        .66
     4       1.00E-02   2.00E-02   2.00E-02   5.00E-02    .20        .16        .61

*** Number of floating-point operations ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
  Type
     1       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07
     2       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07
     3       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07
     4       3.39E+05   8.36E+05   8.36E+05   2.69E+06   6.68E+06   6.68E+06   2.14E+07

*** Speed in megaflops ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
  Type
     1        34.        42.      0.00E+00     54.        35.        37.        33.
     2      0.00E+00     42.        84.        67.        35.        45.        33.
     3        34.        42.        42.        67.        33.        37.        32.
     4        34.        42.        42.        54.        33.        42.        35.
```

****** Results for DBDSQR ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	2.00E-02	3.00E-02	2.00E-02	7.00E-02	6.00E-02	7.00E-02	.26
2	1.00E-02	1.00E-02	0.00E+00	3.00E-02	1.00E-02	3.00E-02	.11
3	2.00E-02	2.00E-02	2.00E-02	7.00E-02	8.00E-02	9.00E-02	.30
4	1.00E-02	2.00E-02	2.00E-02	6.00E-02	8.00E-02	7.00E-02	.24

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	8.66E+04	8.40E+04	8.96E+04	3.30E+05	3.27E+05	3.31E+05	1.28E+06
2	2.56E+04	2.53E+04	2.61E+04	1.01E+05	9.99E+04	1.02E+05	3.96E+05
3	9.67E+04	9.07E+04	9.18E+04	3.77E+05	4.07E+05	4.05E+05	1.55E+06
4	8.50E+04	1.09E+05	1.03E+05	3.18E+05	4.07E+05	3.97E+05	1.26E+06

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.3	2.8	4.5	4.7	5.5	4.7	4.9
2	2.6	2.5	0.00E+00	3.4	10.0	3.4	3.6
3	4.8	4.5	4.6	5.4	5.1	4.5	5.2
4	8.5	5.5	5.2	5.3	5.1	5.7	5.2

****** Results for DBDSQR(L) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.00E-02	3.00E-02	6.00E-02	.22	.26	.43	1.6
2	2.00E-02	1.00E-02	3.00E-02	1.00E-01	.11	.15	.73
3	5.00E-02	3.00E-02	6.00E-02	.25	.28	.48	1.9
4	4.00E-02	4.00E-02	7.00E-02	.22	.30	.46	1.5

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	8.23E+05	8.10E+05	1.62E+06	6.05E+06	6.05E+06	1.18E+07	4.62E+07
2	3.52E+05	3.60E+05	6.73E+05	2.69E+06	2.70E+06	5.25E+06	2.07E+07
3	9.19E+05	8.71E+05	1.65E+06	6.90E+06	7.48E+06	1.44E+07	5.59E+07
4	8.05E+05	1.05E+06	1.86E+06	5.82E+06	7.49E+06	1.41E+07	4.52E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	21.	27.	27.	27.	23.	27.	28.
2	18.	36.	22.	27.	25.	35.	28.
3	18.	29.	28.	28.	27.	30.	30.
4	20.	26.	27.	26.	25.	31.	30.

****** Results for DBDSQR ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.00E-02	1.00E-02	0.00E+00	2.00E-02	3.00E-02	1.00E-02	8.00E-02
2	1.00E-02	0.00E+00	1.00E-02	0.00E+00	1.00E-02	0.00E+00	3.00E-02
3	1.00E-02	1.00E-02	1.00E-02	3.00E-02	3.00E-02	2.00E-02	.11
4	1.00E-02	0.00E+00	0.00E+00	2.00E-02	2.00E-02	2.00E-02	7.00E-02

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.17E+04	4.15E+04	4.22E+04	1.49E+05	1.46E+05	1.44E+05	5.59E+05
2	2.00E+04	2.01E+04	2.02E+04	7.08E+04	7.11E+04	7.14E+04	2.63E+05
3	8.38E+04	7.96E+04	7.98E+04	3.12E+05	2.80E+05	2.86E+05	1.16E+06
4	4.66E+04	5.30E+04	5.20E+04	1.52E+05	1.86E+05	1.81E+05	5.63E+05

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.2	4.2	0.00E+00	7.5	4.9	14.	7.0
2	2.0	0.00E+00	2.0	0.00E+00	7.1	0.00E+00	8.8
3	8.4	8.0	8.0	10.	9.3	14.	11.
4	4.7	0.00E+00	0.00E+00	7.6	9.3	9.1	8.0

****** Results for DBDSQR(L) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	2.00E-02	2.00E-02	4.00E-02	1.00E-01	.12	.20	.77
2	1.00E-02	0.00E+00	1.00E-02	6.00E-02	6.00E-02	9.00E-02	.37
3	3.00E-02	2.00E-02	3.00E-02	.14	.15	.25	1.00
4	2.00E-02	3.00E-02	4.00E-02	.11	.15	.23	.79

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	8.28E+05	8.15E+05	1.62E+06	6.07E+06	6.07E+06	1.18E+07	4.63E+07
2	3.54E+05	3.61E+05	6.75E+05	2.70E+06	2.71E+06	5.26E+06	2.07E+07
3	9.17E+05	8.76E+05	1.66E+06	6.93E+06	7.31E+06	1.45E+07	5.93E+07
4	8.09E+05	1.06E+06	1.86E+06	5.84E+06	7.52E+06	1.42E+07	4.53E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	41.	41.	41.	61.	51.	59.	60.
2	35.	0.00E+00	67.	45.	45.	58.	56.
3	31.	44.	55.	49.	49.	58.	59.
4	40.	35.	47.	53.	50.	62.	57.

****** Results for DBDSQR(R) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	5.00E-02	3.00E-02	.19	.33	.21	1.2
2	1.00E-02	3.00E-02	1.00E-02	1.00E-01	.13	7.00E-02	.56
3	3.00E-02	5.00E-02	4.00E-02	.23	.41	.24	1.6
4	3.00E-02	6.00E-02	3.00E-02	.19	.41	.23	1.2

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	8.24E+05	1.51E+06	8.54E+05	6.05E+06	1.17E+07	6.07E+06	4.62E+07
2	3.54E+05	6.67E+05	3.50E+05	2.69E+06	5.20E+06	2.68E+06	2.07E+07
3	9.20E+05	1.63E+06	8.74E+05	6.91E+06	1.45E+07	7.43E+06	5.60E+07
4	8.06E+05	1.96E+06	9.81E+05	5.82E+06	1.45E+07	7.27E+06	4.53E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	27.	30.	28.	32.	35.	29.	37.
2	35.	22.	35.	27.	40.	38.	37.
3	31.	33.	22.	30.	35.	31.	35.
4	27.	33.	33.	31.	35.	32.	39.

****** Results for DBDSQR(B) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	5.00E-02	7.00E-02	8.00E-02	.37	.48	.60	2.5
2	3.00E-02	3.00E-02	4.00E-02	.15	.23	.22	1.2
3	7.00E-02	9.00E-02	8.00E-02	.38	.61	.65	3.3
4	6.00E-02	1.00E-01	1.00E-01	.37	.62	.61	2.5

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.56E+06	2.24E+06	2.38E+06	1.18E+07	1.74E+07	1.75E+07	9.12E+07
2	6.80E+05	1.00E+06	9.97E+05	5.28E+06	7.80E+06	7.83E+06	4.10E+07
3	1.74E+06	2.41E+06	2.44E+06	1.34E+07	2.15E+07	2.15E+07	1.10E+08
4	1.53E+06	2.91E+06	2.73E+06	1.13E+07	2.16E+07	2.10E+07	8.92E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	31.	32.	30.	32.	36.	29.	37.
2	23.	33.	25.	35.	34.	36.	34.

****** Results for DBDSQR(R) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	2.00E-02	3.00E-02	3.00E-02	.11	.22	.12	.86
2	1.00E-02	2.00E-02	1.00E-02	7.00E-02	.11	7.00E-02	.35
3	2.00E-02	3.00E-02	2.00E-02	.13	.26	.16	1.1
4	2.00E-02	4.00E-02	2.00E-02	.12	.27	.16	.81

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	8.28E+05	1.51E+06	8.58E+05	6.07E+06	1.17E+07	6.08E+06	4.63E+07
2	3.54E+05	6.66E+05	3.51E+05	2.70E+06	5.20E+06	2.69E+06	2.07E+07
3	9.18E+05	1.63E+06	8.77E+05	6.93E+06	1.41E+07	7.45E+06	5.93E+07
4	8.10E+05	1.97E+06	9.86E+05	5.84E+06	1.45E+07	7.29E+06	4.53E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	41.	50.	29.	55.	53.	51.	54.
2	35.	33.	35.	39.	47.	38.	59.
3	46.	54.	44.	53.	54.	47.	53.
4	40.	49.	49.	49.	54.	46.	56.

****** Results for DBDSQR(B) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	4.00E-02	4.00E-02	.21	.30	.30	1.4
2	1.00E-02	2.00E-02	2.00E-02	9.00E-02	.13	.11	.62
3	3.00E-02	4.00E-02	5.00E-02	.24	.34	.33	1.8
4	3.00E-02	4.00E-02	5.00E-02	.21	.40	.35	1.4

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.57E+06	2.24E+06	2.38E+06	1.18E+07	1.74E+07	1.75E+07	9.12E+07
2	6.81E+05	9.99E+05	9.98E+05	5.29E+06	7.80E+06	7.84E+06	4.10E+07
3	1.73E+06	2.41E+06	2.44E+06	1.35E+07	2.10E+07	2.15E+07	1.17E+08
4	1.53E+06	2.91E+06	2.74E+06	1.13E+07	2.16E+07	2.10E+07	8.93E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	52.	56.	60.	56.	58.	58.	63.
2	68.	50.	50.	59.	60.	71.	66.

3	25.	27.	30.	35.	35.	33.	34.
4	25.	29.	27.	31.	35.	34.	36.

****** Results for DBDSQR(V) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	4.00E-02	3.00E-02	.19	.18	.22	1.3
2	1.00E-02	2.00E-02	1.00E-02	9.00E-02	9.00E-02	7.00E-02	.60
3	3.00E-02	3.00E-02	4.00E-02	.18	.24	.22	1.5
4	3.00E-02	3.00E-02	4.00E-02	.19	.23	.24	1.3

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	8.23E+05	8.10E+05	8.52E+05	6.05E+06	6.05E+06	6.06E+06	4.62E+07
2	3.52E+05	3.60E+05	3.49E+05	2.69E+06	2.70E+06	2.68E+06	2.07E+07
3	9.19E+05	8.71E+05	8.72E+05	6.90E+06	7.48E+06	7.42E+06	5.59E+07
4	8.05E+05	1.05E+06	9.79E+05	5.82E+06	7.49E+06	7.27E+06	4.52E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	27.	20.	28.	32.	34.	28.	36.
2	35.	18.	35.	30.	30.	38.	34.
3	31.	29.	22.	38.	31.	34.	38.
4	27.	35.	24.	31.	33.	30.	36.

****** Results for LAPSVD ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	6.00E-02	5.00E-02	.16	.31	.30	1.0
2	2.00E-02	4.00E-02	2.00E-02	.12	.23	.22	.83
3	3.00E-02	5.00E-02	5.00E-02	.15	.33	.33	.98
4	2.00E-02	2.00E-02	5.00E-02	.14	.33	.28	.92

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	4.25E+05	9.20E+05	9.26E+05	3.02E+06	7.00E+06	7.01E+06	2.27E+07
2	3.64E+05	8.62E+05	8.62E+05	2.79E+06	6.78E+06	6.78E+06	2.18E+07
3	4.35E+05	9.27E+05	9.28E+05	3.06E+06	7.08E+06	7.08E+06	2.30E+07
4	4.24E+05	9.46E+05	9.39E+05	3.01E+06	7.08E+06	7.07E+06	2.27E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							

3	58.	60.	49.	56.	62.	65.	63.
4	51.	73.	55.	54.	54.	60.	63.

****** Results for DBDSQR(V) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	2.00E-02	2.00E-02	2.00E-02	.13	.12	.11	.86
2	1.00E-02	1.00E-02	1.00E-02	6.00E-02	7.00E-02	7.00E-02	.37
3	3.00E-02	3.00E-02	2.00E-02	.13	.15	.15	1.1
4	1.00E-02	3.00E-02	3.00E-02	.11	.16	.15	.81

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	8.28E+05	8.15E+05	8.57E+05	6.07E+06	6.07E+06	6.08E+06	4.63E+07
2	3.54E+05	3.61E+05	3.51E+05	2.70E+06	2.71E+06	2.69E+06	2.07E+07
3	9.17E+05	8.76E+05	8.77E+05	6.93E+06	7.31E+06	7.45E+06	5.93E+07
4	8.09E+05	1.06E+06	9.85E+05	5.84E+06	7.52E+06	7.29E+06	4.53E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	41.	41.	43.	47.	51.	55.	54.
2	35.	36.	35.	45.	39.	38.	56.
3	31.	29.	44.	53.	49.	50.	55.
4	81.	35.	33.	53.	47.	49.	56.

****** Results for LAPSVD ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	2.00E-02	3.00E-02	0.00E+00	7.00E-02	.22	.19	.72
2	1.00E-02	2.00E-02	2.00E-02	4.00E-02	.20	.15	.68
3	2.00E-02	3.00E-02	3.00E-02	7.00E-02	.23	.20	.77
4	2.00E-02	2.00E-02	2.00E-02	7.00E-02	.22	.18	.68

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.80E+05	8.78E+05	8.78E+05	2.84E+06	6.82E+06	6.82E+06	2.20E+07
2	3.59E+05	8.56E+05	8.56E+05	2.76E+06	6.75E+06	6.75E+06	2.17E+07
3	4.23E+05	9.16E+05	9.16E+05	3.00E+06	6.96E+06	6.96E+06	2.26E+07
4	3.85E+05	8.89E+05	8.88E+05	2.84E+06	6.86E+06	6.86E+06	2.20E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							

1	14.	15.	19.	19.	23.	23.	22.
2	18.	22.	43.	23.	29.	31.	26.
3	15.	19.	19.	20.	21.	21.	23.
4	21.	47.	19.	21.	21.	25.	25.

****** Results for LAPSVD(1) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	6.00E-02	6.00E-02	.11	.35	.56	.77	2.7
2	4.00E-02	4.00E-02	6.00E-02	.24	.37	.43	1.8
3	6.00E-02	7.00E-02	1.00E-01	.38	.56	.82	2.9
4	6.00E-02	4.00E-02	.11	.34	.59	.77	2.5

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.33E+06	1.82E+06	2.87E+06	1.01E+07	1.41E+07	2.18E+07	7.83E+07
2	8.60E+05	1.36E+06	1.93E+06	6.72E+06	1.07E+07	1.53E+07	5.28E+07
3	1.43E+06	[illegible]	2.91E+06	1.09E+07	1.55E+07	2.45E+07	8.81E+07
4	1.31E+06	[illegible]	3.11E+06	9.85E+06	1.55E+07	2.42E+07	7.74E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	22.	30.	26.	29.	25.	28.	29.
2	22.	34.	32.	28.	29.	35.	30.
3	24.	27.	29.	29.	28.	30.	31.
4	22.	51.	28.	29.	26.	31.	31.

****** Results for LAPSVD(L) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	5.00E-02	7.00E-02	.12	.35	.55	.95	2.7
2	3.00E-02	5.00E-02	9.00E-02	.23	.37	.62	1.8
3	7.00E-02	6.00E-02	.13	.37	.57	1.0	2.9
4	5.00E-02	4.00E-02	.14	.34	.58	.93	2.5

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.33E+06	1.82E+06	3.63E+06	1.01E+07	1.41E+07	2.78E+07	7.83E+07
2	8.60E+05	1.36E+06	2.68E+06	6.72E+06	1.07E+07	2.13E+07	5.28E+07
3	1.43E+06	1.88E+06	3.66E+06	1.09E+07	1.55E+07	3.05E+07	8.81E+07
4	1.31E+06	2.06E+06	3.87E+06	9.85E+06	1.55E+07	3.02E+07	7.74E+07

*** Speed in megaflops ***

1	19.	29.	0.00E+00	41.	31.	36.	31.
2	36.	43.	43.	69.	34.	45.	32.
3	21.	31.	31.	43.	30.	35.	29.
4	19.	44.	44.	41.	31.	38.	32.

****** Results for LAPSVD(1) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	4.00E-02	5.00E-02	4.00E-02	.18	.35	.46	1.7
2	1.00E-02	2.00E-02	2.00E-02	.13	.27	.33	1.3
3	4.00E-02	4.00E-02	5.00E-02	.21	.38	.52	2.0
4	4.00E-02	5.00E-02	6.00E-02	.19	.37	.47	1.7

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.34E+06	1.82E+06	2.87E+06	1.01E+07	1.41E+07	2.18E+07	7.84E+07
2	8.62E+05	1.37E+06	1.93E+06	6.73E+06	1.07E+07	1.53E+07	5.28E+07
3	1.43E+06	1.88E+06	2.91E+06	1.10E+07	1.53E+07	2.45E+07	9.14E+07
4	1.32E+06	2.06E+06	3.12E+06	9.87E+06	1.55E+07	2.42E+07	7.74E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	33.	36.	72.	56.	40.	47.	46.
2	86.	68.	96.	52.	40.	46.	40.
3	36.	47.	58.	52.	40.	47.	46.
4	33.	41.	52.	52.	42.	51.	45.

****** Results for LAPSVD(L) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	4.00E-02	6.00E-02	.17	.33	.65	1.7
2	1.00E-02	2.00E-02	3.00E-02	.12	.28	.49	1.3
3	4.00E-02	4.00E-02	8.00E-02	.20	.36	.71	1.9
4	3.00E-02	6.00E-02	8.00E-02	.19	.37	.67	1.7

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.34E+06	1.82E+06	3.63E+06	1.01E+07	1.41E+07	2.79E+07	7.84E+07
2	8.62E+05	1.37E+06	2.68E+06	6.73E+06	1.07E+07	2.13E+07	5.28E+07
3	1.43E+06	1.88E+06	3.67E+06	1.10E+07	1.53E+07	3.05E+07	9.14E+07
4	1.32E+06	2.06E+06	3.87E+06	9.87E+06	1.55E+07	3.02E+07	7.74E+07

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	27.	26.	30.	29.	26.	29.	29.
2	29.	27.	30.	29.	29.	34.	30.
3	20.	31.	28.	30.	27.	30.	31.
4	26.	51.	28.	29.	27.	32.	30.

****** Results for LAPSVD(R) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	5.00E-02	.13	7.00E-02	.33	.87	.47	2.4
2	3.00E-02	1.00E-01	3.00E-02	.22	.65	.30	1.6
3	4.00E-02	.12	7.00E-02	.35	.94	.53	2.6
4	5.00E-02	9.00E-02	6.00E-02	.32	.99	.49	2.2

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	1.33E+06	3.52E+06	1.86E+06	1.01E+07	2.77E+07	1.41E+07	7.84E+07
2	8.61E+05	2.68E+06	1.36E+06	6.73E+06	2.12E+07	1.07E+07	5.28E+07
3	1.43E+06	3.64E+06	1.88E+06	1.09E+07	3.05E+07	1.54E+07	8.81E+07
4	1.31E+06	3.98E+06	1.99E+06	9.85E+06	3.05E+07	1.53E+07	7.74E+07

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	27.	27.	27.	31.	32.	30.	33.
2	29.	27.	45.	31.	33.	36.	32.
3	36.	30.	27.	31.	32.	29.	34.
4	26.	44.	33.	31.	31.	31.	35.

****** Results for LAPSVD(B) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	7.00E-02	.15	.13	.54	1.1	.97	3.9
2	4.00E-02	1.00E-01	8.00E-02	.33	.79	.56	2.6
3	1.00E-01	.17	.13	.53	1.2	1.0	4.6
4	8.00E-02	.14	.14	.54	1.2	.95	3.8

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	2.24E+06	4.42E+06	3.80E+06	1.71E+07	3.48E+07	2.89E+07	1.34E+08
2	1.36E+06	3.18E+06	2.42E+06	1.07E+07	2.52E+07	1.92E+07	8.38E+07
3	2.42E+06	4.59E+06	3.86E+06	1.88E+07	3.89E+07	3.28E+07	1.53E+08
4	2.20E+06	5.09E+06	4.16E+06	1.67E+07	3.89E+07	3.24E+07	1.32E+08

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	45.	46.	61.	59.	43.	43.	45.
2	86.	68.	89.	56.	38.	43.	39.
3	36.	47.	46.	55.	43.	43.	47.
4	44.	34.	48.	52.	42.	45.	46.

****** Results for LAPSVD(R) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	3.00E-02	7.00E-02	3.00E-02	.19	.71	.33	1.8
2	2.00E-02	7.00E-02	2.00E-02	.14	.62	.24	1.3
3	3.00E-02	8.00E-02	4.00E-02	.20	.74	.35	2.1
4	3.00E-02	8.00E-02	5.00E-02	.20	.76	.35	1.7

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	1.34E+06	3.52E+06	1.86E+06	1.01E+07	2.77E+07	1.41E+07	7.84E+07
2	8.62E+05	2.68E+06	1.36E+06	6.73E+06	2.12E+07	1.07E+07	5.28E+07
3	1.43E+06	3.64E+06	1.88E+06	1.10E+07	3.01E+07	1.55E+07	9.14E+07
4	1.32E+06	3.98E+06	1.99E+06	9.87E+06	3.05E+07	1.53E+07	7.74E+07

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	45.	50.	62.	53.	39.	43.	43.
2	43.	38.	68.	48.	34.	45.	40.
3	48.	45.	47.	55.	41.	44.	44.
4	44.	50.	40.	49.	40.	44.	44.

****** Results for LAPSVD(B) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	5.00E-02	9.00E-02	5.00E-02	.30	.80	.59	2.7
2	1.00E-02	6.00E-02	4.00E-02	.18	.64	.39	1.9
3	5.00E-02	8.00E-02	8.00E-02	.33	.85	.60	3.1
4	5.00E-02	9.00E-02	8.00E-02	.31	.93	.61	2.7

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	2.24E+06	4.42E+06	3.81E+06	1.72E+07	3.48E+07	2.89E+07	1.34E+08
2	1.36E+06	3.18E+06	2.42E+06	1.07E+07	2.52E+07	1.92E+07	8.39E+07
3	2.41E+06	4.59E+06	3.86E+06	1.88E+07	3.84E+07	3.28E+07	1.60E+08
4	2.21E+06	5.09E+06	4.16E+06	1.67E+07	3.90E+07	3.24E+07	1.32E+08

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	32.	29.	29.	32.	32.	30.	34.
2	34.	32.	30.	32.	32.	34.	32.
3	24.	27.	30.	35.	33.	32.	33.
4	28.	36.	30.	31.	32.	34.	35.

****** Results for LINSVD ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	6.00E-02	5.00E-02	.19	.38	.30	1.1
2	4.00E-02	6.00E-02	5.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	2.00E-02	6.00E-02	5.00E-02	.19	.38	.33	1.1
4	3.00E-02	7.00E-02	4.00E-02	.20	.38	.31	1.1

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	4.47E+05	9.66E+05	9.47E+05	3.11E+06	7.17E+06	7.10E+06	2.31E+07
2	4.12E+05	9.26E+05	9.09E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	4.38E+05	9.47E+05	9.39E+05	3.10E+06	7.16E+06	7.10E+06	2.31E+07
4	4.47E+05	9.73E+05	9.55E+05	3.11E+06	7.22E+06	7.15E+06	2.30E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	15.	16.	19.	16.	19.	24.	21.
2	10.	15.	18.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	22.	16.	19.	16.	19.	22.	21.
4	15.	14.	24.	16.	19.	23.	22.

****** Results for LINSVD(1) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	6.00E-02	9.00E-02	1.00E-01	.35	.54	.67	2.2
2	4.00E-02	7.00E-02	8.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	5.00E-02	[illegible]	.15	.37	.56	.73	2.6
4	4.00E-02	8.00E-02	.11	.36	.58	.71	2.4

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.36E+06	1.91E+06	2.87E+06	1.03E+07	1.44E+07	2.20E+07	7.97E+07
2	1.08E+06	1.60E+06	2.32E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	45.	49.	76.	57.	43.	49.	49.
2	1.36E+02	53.	61.	59.	39.	49.	44.
3	48.	57.	48.	57.	45.	55.	51.
4	44.	57.	52.	54.	42.	53.	49.

****** Results for LINSVD ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	2.00E-02	4.00E-02	4.00E-02	.11	.28	.26	.85
2	2.00E-02	4.00E-02	3.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	2.00E-02	3.00E-02	3.00E-02	.13	.29	.25	.88
4	2.00E-02	4.00E-02	3.00E-02	.12	.28	.23	.86

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	4.47E+05	9.66E+05	9.47E+05	3.11E+06	7.17E+06	7.10E+06	2.31E+07
2	4.12E+05	9.26E+05	9.09E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	4.38E+05	9.47E+05	9.39E+05	3.10E+06	7.16E+06	7.10E+06	2.31E+07
4	4.47E+05	9.73E+05	9.55E+05	3.11E+06	7.22E+06	7.15E+06	2.30E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	22.	24.	24.	28.	26.	27.	27.
2	21.	23.	30.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	22.	32.	31.	24.	25.	28.	26.
4	22.	24.	32.	26.	26.	31.	27.

****** Results for LINSVD(1) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	4.00E-02	6.00E-02	6.00E-02	.25	.40	.49	1.7
2	3.00E-02	5.00E-02	5.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	5.00E-02	6.00E-02	6.00E-02	.26	.42	.56	2.0
4	4.00E-02	6.00E-02	7.00E-02	.24	.44	.52	1.9

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.36E+06	1.91E+06	2.87E+06	1.03E+07	1.44E+07	2.20E+07	7.97E+07
2	1.08E+06	1.60E+06	2.32E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00

3	1.28E+06	1.76E+06	2.76E+06	1.01E+07	1.43E+07	2.21E+07	7.96E+07
4	1.36E+06	1.98E+06	3.00E+06	1.03E+07	1.52E+07	2.35E+07	7.86E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	23.	21.	29.	29.	27.	33.	36.
2	27.	23.	29.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	26.	22.	18.	27.	25.	30.	31.
4	34.	25.	27.	29.	26.	33.	32.

****** Results for LINSVD(L) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	5.00E-02	1.00E-01	.12	.34	.54	.79	2.3
2	5.00E-02	8.00E-02	1.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	6.00E-02	8.00E-02	.13	.37	.58	.93	2.6
4	5.00E-02	7.00E-02	.13	.39	.60	.88	2.3

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.36E+06	1.91E+06	3.63E+06	1.03E+07	1.44E+07	2.80E+07	7.97E+07
2	1.08E+06	1.60E+06	3.08E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.28E+06	1.76E+06	3.52E+06	1.01E+07	1.43E+07	2.81E+07	7.96E+07
4	1.36E+06	1.98E+06	3.76E+06	1.03E+07	1.52E+07	2.96E+07	7.86E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	27.	19.	30.	30.	27.	35.	35.
2	22.	20.	31.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	21.	22.	27.	27.	25.	30.	31.
4	27.	28.	29.	26.	25.	34.	33.

****** Results for LINSVD(R) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	6.00E-02	.13	7.00E-02	.37	.91	.49	2.4
2	4.00E-02	.12	6.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	6.00E-02	.11	8.00E-02	.38	.99	.54	2.6
4	6.00E-02	.15	6.00E-02	.38	1.0	.49	2.4

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							

3	1.28E+06	1.76E+06	2.76E+06	1.01E+07	1.43E+07	2.21E+07	7.96E+07
4	1.36E+06	1.98E+06	3.00E+06	1.03E+07	1.52E+07	2.35E+07	7.86E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	34.	32.	48.	41.	36.	45.	46.
2	36.	32.	46.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	26.	29.	46.	39.	34.	39.	40.
4	34.	33.	43.	43.	35.	45.	42.

****** Results for LINSVD(L) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.00E-02	5.00E-02	8.00E-02	.25	.36	.65	1.8
2	3.00E-02	5.00E-02	6.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	4.00E-02	5.00E-02	8.00E-02	.27	.42	.69	2.0
4	4.00E-02	6.00E-02	9.00E-02	.25	.41	.73	1.9

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.36E+06	1.91E+06	3.63E+06	1.03E+07	1.44E+07	2.80E+07	7.97E+07
2	1.08E+06	1.60E+06	3.08E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.28E+06	1.76E+06	3.52E+06	1.01E+07	1.43E+07	2.81E+07	7.96E+07
4	1.36E+06	1.98E+06	3.76E+06	1.03E+07	1.52E+07	2.96E+07	7.86E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	34.	38.	45.	41.	40.	43.	44.
2	36.	32.	51.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	32.	35.	44.	37.	34.	41.	39.
4	34.	33.	42.	41.	37.	40.	42.

****** Results for LINSVD(R) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.00E-02	9.00E-02	5.00E-02	.24	.71	.39	1.9
2	3.00E-02	7.00E-02	5.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	4.00E-02	8.00E-02	6.00E-02	.27	.76	.41	2.0
4	4.00E-02	8.00E-02	5.00E-02	.25	.75	.37	1.9

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							

1	1.35E+06	3.71E+06	1.87E+06	1.03E+07	2.84E+07	1.42E+07	7.96E+07
2	1.07E+06	3.13E+06	1.57E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.28E+06	3.43E+06	1.81E+06	1.01E+07	2.81E+07	1.43E+07	7.95E+07
4	1.35E+06	3.83E+06	1.93E+06	1.02E+07	2.99E+07	1.50E+07	7.86E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	23.	29.	27.	28.	31.	29.	33.
2	27.	26.	26.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	21.	31.	23.	27.	28.	26.	31.
4	23.	26.	32.	27.	29.	31.	32.

****** Results for LINSVD(B) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	8.00E-02	.17	.13	.54	1.0	.81	3.6
2	7.00E-02	.14	9.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	9.00E-02	.17	.13	.59	1.2	.91	4.0
4	8.00E-02	.16	.13	.54	1.3	.96	3.5

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	2.26E+06	4.66E+06	3.79E+06	1.75E+07	3.57E+07	2.91E+07	1.36E+08
2	1.74E+06	3.81E+06	2.99E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	2.12E+06	4.25E+06	3.63E+06	1.71E+07	3.52E+07	2.93E+07	1.36E+08
4	2.26E+06	4.83E+06	3.98E+06	1.74E+07	3.79E+07	3.14E+07	1.34E+08

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	28.	27.	29.	32.	34.	36.	38.
2	25.	27.	33.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	24.	25.	28.	29.	29.	32.	34.
4	28.	30.	31.	32.	30.	33.	38.

End of timing run
Total time used = 136.58 seconds

1	1.35E+06	3.71E+06	1.87E+06	1.03E+07	2.84E+07	1.42E+07	7.96E+07
2	1.07E+06	3.13E+06	1.57E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.28E+06	3.43E+06	1.81E+06	1.01E+07	2.81E+07	1.43E+07	7.95E+07
4	1.35E+06	3.83E+06	1.93E+06	1.02E+07	2.99E+07	1.50E+07	7.86E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	34.	41.	37.	43.	40.	36.	42.
2	36.	45.	31.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	32.	43.	30.	37.	37.	35.	39.
4	34.	48.	39.	41.	40.	41.	42.

****** Results for LINSVD(B) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	5.00E-02	.11	6.00E-02	.38	.85	.63	2.9
2	4.00E-02	9.00E-02	6.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	5.00E-02	1.00E-01	8.00E-02	.41	.89	.68	3.2
4	6.00E-02	.11	8.00E-02	.37	.88	.70	2.9

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	2.26E+06	4.66E+06	3.79E+06	1.75E+07	3.57E+07	2.91E+07	1.36E+08
2	1.74E+06	3.81E+06	2.99E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	2.12E+06	4.25E+06	3.63E+06	1.71E+07	3.52E+07	2.93E+07	1.36E+08
4	2.26E+06	4.83E+06	3.98E+06	1.74E+07	3.79E+07	3.14E+07	1.34E+08

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	45.	42.	63.	46.	42.	46.	47.
2	43.	42.	50.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	42.	42.	45.	42.	40.	43.	43.
4	38.	44.	50.	47.	43.	45.	47.

End of timing run
Total time used = 98.55 seconds

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 Timing the Symmetric Eigenvalue Problem routines
   ZHETRD, ZSTEQR, and DSTERF

LAPACK VERSION 1.1, released March 31, 1993

The following parameter values will be used:
   Values of N   :      50   100   200   300   400
   Values of NB  :       1    16    32    48    64
   Values of LDA :     401   401   401   401   401

Minimum time a subroutine will be timed =      .00 seconds


****** Results for ZHETRD                ******
    line  1 with LDA =  401, NB =   1
    line  2 with LDA =  401, NB =  16
    line  3 with LDA =  401, NB =  32
    line  4 with LDA =  401, NB =  48
    line  5 with LDA =  401, NB =  64

*** Time in seconds ***
      N     50       100       200       300       400
 Type
    1     2.00E-02  .13       .82       2.8       6.7
          2.00E-02  .16       1.0       3.3       7.7
          2.00E-02  .18       1.2       3.8       8.4
          3.00E-02  .22       1.3       4.2       9.0
          2.00E-02  .23       1.4       4.3       9.7

    2     2.00E-02  .11       .86       2.9       6.4
          2.00E-02  .14       1.1       3.4       7.7
          3.00E-02  .19       1.2       3.8       8.4
          4.00E-02  .20       1.4       4.1       9.0
          1.00E-02  .20       1.5       4.5       9.5

    3     1.00E-02  .11       .84       2.8       6.8
          3.00E-02  .15       1.1       3.4       7.8
          3.00E-02  .19       1.2       3.7       8.3
          3.00E-02  .22       1.4       4.2       9.1
          2.00E-02  .23       1.5       4.3       9.6

    4     0.00E+00 1.00E-01   .85       2.8       6.7
          2.00E-02  .16       1.0       3.4       7.6
          3.00E-02  .18       1.2       3.7       8.5
          3.00E-02  .23       1.5       4.1       9.2
          2.00E-02  .25       1.6       4.4       9.9

*** Number of floating-point operations ***
      N     50       100       200       300       400
 Type
    1     7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
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 Timing the Symmetric Eigenvalue Problem routines
   ZHETRD, ZSTEQR, and DSTERF

LAPACK VERSION 2.0, released September 30, 1994

The following parameter values will be used:
   Values of N   :      50   100   200   300   400
   Values of NB  :       1    16    32    48    64
   Values of LDA :     401   401   401   401   401

Minimum time a subroutine will be timed =      .00 seconds


****** Results for ZHETRD                ******
    line  1 with LDA =  401, NB =   1
    line  2 with LDA =  401, NB =  16
    line  3 with LDA =  401, NB =  32
    line  4 with LDA =  401, NB =  48
    line  5 with LDA =  401, NB =  64

*** Time in seconds ***
      N     50       100       200       300       400
 Type
    1     1.00E-02 8.00E-02  .63       2.0       5.0
          2.00E-02 1.00E-01  .68       2.1       5.1
          2.00E-02  .13       .80       2.5       5.7
          3.00E-02  .15       .90       2.8       6.1
          1.00E-02  .16       .99       3.0       6.6

    2     1.00E-02 8.00E-02  .61       2.0       4.8
          2.00E-02 1.00E-01  .63       2.2       5.2
          2.00E-02  .13       .78       2.6       5.4
          2.00E-02  .16       .90       2.7       5.9
          1.00E-02  .16       .99       3.0       6.5

    3     1.00E-02 7.00E-02  .61       2.1       4.8
          2.00E-02 9.00E-02  .60       2.1       5.0
          2.00E-02  .13       .76       2.5       5.7
          3.00E-02  .15       .91       2.8       6.0
          1.00E-02  .16       .99       3.0       6.3

    4     1.00E-02 7.00E-02  .64       2.0       4.9
          2.00E-02 1.00E-01  .68       2.1       5.0
          2.00E-02  .12       .80       2.4       5.5
          3.00E-02  .13       .93       2.6       6.1
          1.00E-02  .15       1.0       3.0       6.4

*** Number of floating-point operations ***
      N     50       100       200       300       400
 Type
    1     7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
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          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

     2    7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

     3    7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

     4    7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

*** Speed in megaflops ***
       N     50        100       200       300       400
  Type
     1      35.       42.       53.       51.       52.
            35.       34.       42.       43.       45.
            35.       31.       35.       38.       41.
            24.       25.       33.       35.       38.
            35.       24.       30.       34.       36.

     2      35.       50.       50.       50.       54.
            35.       39.       41.       42.       45.
            24.       29.       36.       38.       41.
            18.       28.       32.       35.       38.
            71.       28.       30.       33.       36.

     3      71.       50.       52.       51.       50.
            24.       37.       41.       43.       44.
            24.       29.       35.       40.       42.
            24.       25.       32.       35.       38.
            35.       24.       29.       33.       36.

     4   0.00E+00     55.       51.       52.       51.
            35.       34.       41.       43.       45.
            24.       31.       36.       39.       40.
            24.       24.       29.       36.       37.
            35.       22.       26.       33.       35.

****** Results for ZSTEQR(N)            ******
    with LDA =  401

*** Time in seconds ***
       N     50        100       200       300       400
  Type
     1   1.00E-02  3.00E-02  .13       .26       .49
```

```
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

     2    7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

     3    7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

     4    7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08
          7.09E+05 5.50E+06 4.33E+07 1.46E+08 3.44E+08

*** Speed in megaflops ***
       N     50        100       200       300       400
  Type
     1      71.       69.       69.       72.       69.
            35.       55.       64.       69.       68.
            35.       42.       54.       57.       61.
            24.       37.       48.       52.       56.
            71.       34.       44.       49.       52.

     2      71.       69.       71.       72.       71.
            35.       55.       69.                 66.
            35.       42.       56.       56.       63.
            35.       34.       48.       53.       58.
            71.       34.       44.       48.       53.

     3      71.       79.       71.       70.       72.
            35.       61.       72.       68.       68.
            35.       42.       57.       58.       60.
            24.       37.       48.       53.       57.
            71.       34.       44.       48.       54.

     4      71.       79.       68.       71.       71.
            35.       55.       64.       70.       68.
            35.       46.       54.       61.       63.
            24.       42.       47.       56.       56.
            71.       37.       42.       49.       54.

****** Results for ZSTEQR(N)            ******
    with LDA =  401

*** Time in seconds ***
       N     50        100       200       300       400
  Type
     1   1.00E-02  2.00E-02  .11       .26       .41
```

2	1.00E-02	3.00E-02	.11	.25	.43
3	0.00E+00	3.00E-02	8.00E-02	.20	.34
4	1.00E-02	3.00E-02	.13	.24	.43

*** Number of floating-point operations ***

N	50	100	200	300	400
Type					
1	6.73E+04	2.52E+05	9.30E+05	2.07E+06	3.67E+06
2	5.62E+04	2.17E+05	8.38E+05	1.88E+06	3.35E+06
3	5.03E+04	1.94E+05	6.66E+05	1.52E+06	2.42E+06
4	5.56E+04	2.12E+05	8.10E+05	1.80E+06	3.16E+06

*** Speed in megaflops ***

N	50	100	200	300	400
Type					
1	6.7	8.4	7.2	8.0	7.5
2	5.6	7.2	7.6	7.5	7.8
3	0.00E+00	6.5	8.3	7.6	7.1
4	5.6	7.1	6.2	7.5	7.3

****** Results for ZUNGTR+ZSTEQR(V) ******

line 1 with LDA = 401, NB = 1
line 2 with LDA = 401, NB = 16
line 3 with LDA = 401, NB = 32
line 4 with LDA = 401, NB = 48
line 5 with LDA = 401, NB = 64

*** Time in seconds ***

N	50	100	200	300	400
Type					
1	8.00E-02	.73	5.4	17.	41.
	1.00E-01	.73	5.7	18.	42.
	.11	.73	5.1	18.	42.
	.11	.74	5.6	18.	43.
	9.00E-02	.76	5.4	18.	43.
2	8.00E-02	.66	4.9	16.	38.
	9.00E-02	.61	5.0	17.	39.
	1.00E-01	.65	5.2	17.	39.
	.11	.66	5.3	17.	40.
	9.00E-02	.68	5.2	17.	40.
3	6.00E-02	.58	4.1	14.	30.
	5.00E-02	.58	4.1	14.	31.
	8.00E-02	.65	4.5	15.	31.
	8.00E-02	.61	4.4	14.	31.
	6.00E-02	.64	4.4	15.	32.
4	8.00E-02	.64	4.9	16.	37.
	9.00E-02	.63	4.9	16.	38.
	9.00E-02	.68	4.9	16.	38.
	8.00E-02	.67	5.1	16.	38.
	8.00E-02	.68	4.9	17.	38.

2	1.00E-02	3.00E-02	1.00E-01	.22	.38
3	0.00E+00	2.00E-02	8.00E-02	.18	.29
4	0.00E+00	2.00E-02	9.00E-02	.18	.32

*** Number of floating-point operations ***

N	50	100	200	300	400
Type					
1	7.05E+04	2.67E+05	9.78E+05	2.17E+06	3.85E+06
2	5.90E+04	2.32E+05	8.82E+05	1.98E+06	3.53E+06
3	5.32E+04	2.09E+05	7.14E+05	1.61E+06	2.57E+06
4	5.88E+04	2.24E+05	8.57E+05	1.92E+06	3.34E+06

*** Speed in megaflops ***

N	50	100	200	300	400
Type					
1	7.0	13.	8.9	8.3	9.4
2	5.9	7.7	8.8	9.0	9.3
3	0.00E+00	10.	8.9	8.9	8.9
4	0.00E+00	11.	9.5	11.	10.

****** Results for ZUNGTR+ZSTEQR(V) ******

line 1 with LDA = 401, NB = 1
line 2 with LDA = 401, NB = 16
line 3 with LDA = 401, NB = 32
line 4 with LDA = 401, NB = 48
line 5 with LDA = 401, NB = 64

*** Time in seconds ***

N	50	100	200	300	400
Type					
1	4.00E-02	.35	2.6	8.4	20.
	4.00E-02	.39	2.6	8.5	20.
	4.00E-02	.42	2.6	8.7	21.
	5.00E-02	.37	2.7	8.8	20.
	4.00E-02	.37	2.7	9.0	20.
2	3.00E-02	.31	2.3	7.9	19.
	4.00E-02	.34	2.4	8.2	19.
	4.00E-02	.34	2.3	8.3	19.
	4.00E-02	.33	2.4	8.2	19.
	2.00E-02	.34	2.5	8.4	20.
3	4.00E-02	.29	2.0	7.0	15.
	3.00E-02	.32	2.0	7.0	16.
	4.00E-02	.30	2.1	7.5	16.
	4.00E-02	.31	2.2	7.2	16.
	3.00E-02	.29	2.2	7.3	17.
4	4.00E-02	.30	2.3	7.7	18.
	4.00E-02	.32	2.3	7.9	18.
	4.00E-02	.32	2.4	8.1	19.
	4.00E-02	.34	2.5	8.1	19.
	3.00E-02	.33	2.6	8.2	19.

*** Number of floating-point operations ***

Type	N	50	100	200	300	400
1		1.94E+06	1.44E+07	1.06E+08	3.55E+08	8.39E+08
		1.94E+06	1.44E+07	1.06E+08	3.55E+08	8.39E+08
		1.94E+06	1.44E+07	1.06E+08	3.55E+08	8.39E+08
		1.94E+06	1.44E+07	1.06E+08	3.55E+08	8.39E+08
		1.94E+06	1.44E+07	1.06E+08	3.55E+08	8.39E+08
2		1.62E+06	1.24E+07	9.59E+07	3.23E+08	7.66E+08
		1.62E+06	1.24E+07	9.59E+07	3.23E+08	7.66E+08
		1.62E+06	1.24E+07	9.59E+07	3.23E+08	7.66E+08
		1.62E+06	1.24E+07	9.59E+07	3.23E+08	7.66E+08
		1.62E+06	1.24E+07	9.59E+07	3.23E+08	7.66E+08
3		1.44E+06	1.11E+07	7.61E+07	2.60E+08	5.53E+08
		1.44E+06	1.11E+07	7.61E+07	2.60E+08	5.53E+08
		1.44E+06	1.11E+07	7.61E+07	2.60E+08	5.53E+08
		1.44E+06	1.11E+07	7.61E+07	2.60E+08	5.53E+08
		1.44E+06	1.11E+07	7.61E+07	2.60E+08	5.53E+08
4		1.60E+06	1.21E+07	9.26E+07	3.09E+08	7.22E+08
		1.60E+06	1.21E+07	9.26E+07	3.09E+08	7.22E+08
		1.60E+06	1.21E+07	9.26E+07	3.09E+08	7.22E+08
		1.60E+06	1.21E+07	9.26E+07	3.09E+08	7.22E+08
		1.60E+06	1.21E+07	9.26E+07	3.09E+08	7.22E+08

*** Speed in megaflops ***

Type	N	50	100	200	300	400
1		24.	20.	20.	21.	20.
		19.	20.	19.	20.	20.
		18.	20.	21.	20.	20.
		18.	20.	19.	20.	20.
		22.	19.	20.	19.	19.
2		20.	19.	20.	20.	20.
		18.	20.	19.	19.	20.
		16.	19.	19.	19.	20.
		15.	19.	18.	19.	19.
		18.	18.	18.	19.	19.
3		24.	19.	19.	19.	19.
		29.	19.	19.	18.	18.
		18.	17.	17.	18.	18.
		18.	18.	17.	18.	18.
		24.	17.	17.	18.	17.
4		20.	19.	19.	19.	20.
		18.	19.	19.	19.	19.
		18.	18.	19.	19.	19.
		20.	18.	18.	19.	19.
		20.	18.	19.	18.	19.

*** Number of floating-point operations ***

Type	N	50	100	200	300	400
1		1.94E+06	1.46E+07	1.07E+08	3.55E+08	8.40E+08
		1.94E+06	1.46E+07	1.07E+08	3.55E+08	8.40E+08
		1.94E+06	1.46E+07	1.07E+08	3.55E+08	8.40E+08
		1.94E+06	1.46E+07	1.07E+08	3.55E+08	8.40E+08
		1.94E+06	1.46E+07	1.07E+08	3.55E+08	8.40E+08
2		1.62E+06	1.27E+07	9.63E+07	3.24E+08	7.70E+08
		1.62E+06	1.27E+07	9.63E+07	3.24E+08	7.70E+08
		1.62E+06	1.27E+07	9.63E+07	3.24E+08	7.70E+08
		1.62E+06	1.27E+07	9.63E+07	3.24E+08	7.70E+08
		1.62E+06	1.27E+07	9.63E+07	3.24E+08	7.70E+08
3		1.46E+06	1.14E+07	7.78E+07	2.63E+08	5.59E+08
		1.46E+06	1.14E+07	7.78E+07	2.63E+08	5.59E+08
		1.46E+06	1.14E+07	7.78E+07	2.63E+08	5.59E+08
		1.46E+06	1.14E+07	7.78E+07	2.63E+08	5.59E+08
		1.46E+06	1.14E+07	7.78E+07	2.63E+08	5.59E+08
4		1.62E+06	1.22E+07	9.36E+07	3.14E+08	7.29E+08
		1.62E+06	1.22E+07	9.36E+07	3.14E+08	7.29E+08
		1.62E+06	1.22E+07	9.36E+07	3.14E+08	7.29E+08
		1.62E+06	1.22E+07	9.36E+07	3.14E+08	7.29E+08
		1.62E+06	1.22E+07	9.36E+07	3.14E+08	7.29E+08

*** Speed in megaflops ***

Type	N	50	100	200	300	400
1		48.	42.	42.	42.	43.
		48.	37.	42.	42.	42.
		48.	35.	41.	41.	40.
		39.	40.	40.	40.	42.
		48.	40.	40.	39.	41.
2		54.	41.	42.	41.	41.
		41.	37.	40.	40.	41.
		41.	37.	41.	39.	41.
		41.	38.	39.	39.	41.
		81.	37.	38.	39.	39.
3		36.	39.	38.	38.	36.
		49.	36.	38.	38.	36.
		36.	38.	37.	35.	35.
		36.	37.	35.	37.	35.
		49.	39.	35.	36.	34.
4		40.	41.	41.	41.	40.
		40.	38.	40.	40.	40.
		40.	38.	39.	39.	39.
		40.	36.	38.	39.	39.
		54.	37.	36.	38.	38.

****** Results for ZPTEQR(N) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	2.00E-02	7.00E-02	.23	.53	.92
2	1.00E-02	6.00E-02	.22	.49	.87
3	2.00E-02	5.00E-02	.21	.45	.80
4	2.00E-02	6.00E-02	.21	.47	.86

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	9.54E+04	3.44E+05	1.32E+06	2.90E+06	5.08E+06
2	8.13E+04	3.06E+05	1.19E+06	2.65E+06	4.57E+06
3	7.78E+04	3.02E+05	1.17E+06	2.40E+06	4.13E+06
4	8.00E+04	3.01E+05	1.16E+06	2.57E+06	4.58E+06

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	4.8	4.9	5.7	5.5	5.5
2	8.1	5.1	5.4	5.4	5.2
3	3.9	6.0	5.6	5.3	5.2
4	4.0	5.0	5.5	5.5	5.3

****** Results for ZUNGTR+ZPTEQR(V) ******
line 1 with LDA = 401, NB = 1
line 2 with LDA = 401, NB = 16
line 3 with LDA = 401, NB = 32
line 4 with LDA = 401, NB = 48
line 5 with LDA = 401, NB = 64

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	8.00E-02	.64	5.0	16.	37.
	.12	.68	5.2	17.	38.
	.11	.71	5.2	17.	38.
	.12	.74	5.2	17.	39.
	.11	.72	5.3	17.	39.
2	1.00E-01	.62	4.6	16.	35.
	9.00E-02	.62	4.7	15.	36.
	1.00E-01	.64	4.9	16.	35.
	.11	.66	5.0	16.	36.
	8.00E-02	.66	5.1	16.	36.
3	9.00E-02	.60	4.6	14.	32.
	9.00E-02	.64	4.7	14.	33.
	8.00E-02	.63	4.6	15.	33.
	1.00E-01	.63	4.7	15.	33.
	9.00E-02	.66	4.7	15.	34.

****** Results for ZPTEQR(N) ******
with LDA = 401

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	0.00E+00	2.00E-02	6.00E-02	.13	.25
2	1.00E-02	2.00E-02	6.00E-02	.12	.21
3	1.00E-02	1.00E-02	7.00E-02	.13	.23
4	1.00E-02	2.00E-02	5.00E-02	.13	.21

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	4.60E+04	1.56E+05	5.68E+05	1.20E+06	2.16E+06
2	4.10E+04	1.47E+05	5.28E+05	1.16E+06	2.01E+06
3	4.88E+04	1.65E+05	5.83E+05	1.21E+06	2.06E+06
4	4.16E+04	1.43E+05	5.17E+05	1.15E+06	2.01E+06

*** Speed in megaflops ***

Type \ N	50	100	200	300	400
1	0.00E+00	7.8	9.5	9.3	8.6
2	4.1	7.4	8.8	9.7	9.6
3	4.9	17.	8.3	9.3	9.0
4	4.2	7.1	10.	8.8	9.6

****** Results for ZUNGTR+ZPTEQR(V) ******
line 1 with LDA = 401, NB = 1
line 2 with LDA = 401, NB = 16
line 3 with LDA = 401, NB = 32
line 4 with LDA = 401, NB = 48
line 5 with LDA = 401, NB = 64

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	4.00E-02	.32	2.4	7.8	18.
	5.00E-02	.34	2.4	8.2	19.
	5.00E-02	.35	2.5	8.2	19.
	5.00E-02	.35	2.5	8.1	19.
	4.00E-02	.36	2.7	8.3	19.
2	4.00E-02	.30	2.2	7.5	17.
	4.00E-02	.32	2.2	7.5	17.
	4.00E-02	.32	2.3	7.9	18.
	5.00E-02	.33	2.3	7.8	18.
	4.00E-02	.34	2.4	7.8	18.
3	3.00E-02	.29	2.2	6.9	16.
	5.00E-02	.30	2.2	7.1	17.
	4.00E-02	.32	2.3	7.2	17.
	4.00E-02	.33	2.3	7.4	17.
	4.00E-02	.33	2.4	7.5	17.

4	.11	.63	4.5	15.	35.
	1.00E-01	.61	4.5	15.	35.
	9.00E-02	.67	4.7	15.	36.
	1.00E-01	.68	4.7	15.	36.
	9.00E-02	.64	5.0	16.	36.

*** Number of floating-point operations ***

N	50	100	200	300	400
Type					
1	9.14E+05	6.34E+06	4.76E+07	1.56E+08	3.62E+08
	9.14E+05	6.34E+06	4.76E+07	1.56E+08	3.62E+08
	9.14E+05	6.34E+06	4.76E+07	1.56E+08	3.62E+08
	9.14E+05	6.34E+06	4.76E+07	1.56E+08	3.62E+08
	9.14E+05	6.34E+06	4.76E+07	1.56E+08	3.62E+08
2	7.81E+05	5.64E+06	4.29E+07	1.43E+08	3.26E+08
	7.81E+05	5.64E+06	4.29E+07	1.43E+08	3.26E+08
	7.81E+05	5.64E+06	4.29E+07	1.43E+08	3.26E+08
	7.81E+05	5.64E+06	4.29E+07	1.43E+08	3.26E+08
	7.81E+05	5.64E+06	4.29E+07	1.43E+08	3.26E+08
3	7.48E+05	5.57E+06	4.20E+07	1.29E+08	2.96E+08
	7.48E+05	5.57E+06	4.20E+07	1.29E+08	2.96E+08
	7.48E+05	5.57E+06	4.20E+07	1.29E+08	2.96E+08
	7.48E+05	5.57E+06	4.20E+07	1.29E+08	2.96E+08
	7.48E+05	5.57E+06	4.20E+07	1.29E+08	2.96E+08
4	7.69E+05	5.54E+06	4.19E+07	1.38E+08	3.27E+08
	7.69E+05	5.54E+06	4.19E+07	1.38E+08	3.27E+08
	7.69E+05	5.54E+06	4.19E+07	1.38E+08	3.27E+08
	7.69E+05	5.54E+06	4.19E+07	1.38E+08	3.27E+08
	7.69E+05	5.54E+06	4.19E+07	1.38E+08	3.27E+08

*** Speed in megaflops ***

N	50	100	200	300	400
Type					
1	11.	9.9	9.6	9.5	9.8
	7.6	9.3	9.2	9.4	9.6
	8.3	8.9	9.2	9.3	9.5
	7.6	8.6	9.2	9.2	9.4
	8.3	8.8	9.0	9.4	9.3
2	7.8	9.1	9.4	9.2	9.4
	8.7	9.1	9.2	9.4	9.1
	7.8	8.8	8.7	9.1	9.2
	7.1	8.5	8.5	8.9	9.1
	9.8	8.5	8.4	8.8	9.0
3	8.3	9.3	9.0	9.2	9.4
	8.3	8.7	9.0	9.1	9.1
	9.3	8.8	9.1	8.7	8.9
	7.5	8.8	8.9	8.7	9.0
	8.3	8.4	8.9	8.6	8.8
4	7.0	8.8	9.3	9.3	9.4

4	4.00E-02	.30	2.2	7.3	17.
	4.00E-02	.31	2.3	7.5	17.
	5.00E-02	.33	2.4	7.7	17.
	3.00E-02	.33	2.4	7.6	18.
	3.00E-02	.32	2.4	8.0	18.

*** Number of floating-point operations ***

N	50	100	200	300	400
Type					
1	1.74E+06	1.24E+07	9.39E+07	3.09E+08	7.20E+08
	1.74E+06	1.24E+07	9.39E+07	3.09E+08	7.20E+08
	1.74E+06	1.24E+07	9.39E+07	3.09E+08	7.20E+08
	1.74E+06	1.24E+07	9.39E+07	3.09E+08	7.20E+08
	1.74E+06	1.24E+07	9.39E+07	3.09E+08	7.20E+08
2	1.49E+06	1.10E+07	8.48E+07	2.83E+08	6.47E+08
	1.49E+06	1.10E+07	8.48E+07	2.83E+08	6.47E+08
	1.49E+06	1.10E+07	8.48E+07	2.83E+08	6.47E+08
	1.49E+06	1.10E+07	8.48E+07	2.83E+08	6.47E+08
	1.49E+06	1.10E+07	8.48E+07	2.83E+08	6.47E+08
3	1.41E+06	1.09E+07	8.16E+07	2.61E+08	5.89E+08
	1.41E+06	1.09E+07	8.16E+07	2.61E+08	5.89E+08
	1.41E+06	1.09E+07	8.16E+07	2.61E+08	5.89E+08
	1.41E+06	1.09E+07	8.16E+07	2.61E+08	5.89E+08
	1.41E+06	1.09E+07	8.16E+07	2.61E+08	5.89E+08
4	1.46E+06	1.08E+07	8.27E+07	2.74E+08	6.49E+08
	1.46E+06	1.08E+07	8.27E+07	2.74E+08	6.49E+08
	1.46E+06	1.08E+07	8.27E+07	2.74E+08	6.49E+08
	1.46E+06	1.08E+07	8.27E+07	2.74E+08	6.49E+08
	1.46E+06	1.08E+07	8.27E+07	2.74E+08	6.49E+08

*** Speed in megaflops ***

N	50	100	200	300	400
Type					
1	43.	39.	39.	40.	39.
	35.	36.	38.	38.	38.
	35.	35.	38.	38.	38.
	35.	35.	37.	38.	37.
	43.	34.	35.	37.	38.
2	37.	37.	39.	38.	39.
	37.	34.	38.	37.	37.
	37.	34.	37.	36.	37.
	30.	33.	36.	36.	36.
	37.	32.	35.	36.	36.
3	47.	37.	38.	37.	37.
	28.	36.	37.	37.	35.
	35.	34.	35.	36.	34.
	35.	33.	35.	35.	35.
	35.	33.	34.	35.	35.
4	37.	36.	37.	38.	38.

7.7	9.1	9.4	9.2	9.2
8.5	8.3	8.9	9.1	9.2
7.7	8.2	8.9	9.0	9.1
8.5	8.7	8.3	8.8	9.0

****** Results for DSTEBZ+ZSTEIN+ZUNMTR ******
line 1 with LDA = 401, NB = 1
line 2 with LDA = 401, NB = 16
line 3 with LDA = 401, NB = 32
line 4 with LDA = 401, NB = 48
line 5 with LDA = 401, NB = 64

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	.14	.74	3.6	9.8	21.
	.16	.74	3.9	10.	22.
	.16	.75	3.8	11.	23.
	.18	.78	3.9	11.	23.
	.15	.76	4.1	11.	23.
2	.15	.70	3.6	11.	24.
	.16	.72	3.9	11.	26.
	.16	.74	4.1	12.	26.
	.17	.78	4.1	12.	27.
	.16	.80	4.1	12.	27.
3	.13	.72	4.5	14.	31.
	.17	.78	4.6	15.	32.
	.17	.78	4.7	15.	33.
	.16	.81	4.8	15.	33.
	.16	.82	5.0	16.	34.
4	.13	.75	4.0	12.	25.
	.19	.76	4.1	11.	26.
	.14	.76	4.2	12.	27.
	.18	.81	4.2	12.	27.
	.14	.81	4.4	13.	28.

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	5.30E+05	2.08E+06	8.20E+06	1.82E+07	3.23E+07
	5.30E+05	2.08E+06	8.20E+06	1.82E+07	3.23E+07
	5.30E+05	2.08E+06	8.20E+06	1.82E+07	3.23E+07
	5.30E+05	2.08E+06	8.20E+06	1.82E+07	3.23E+07
	5.30E+05	2.08E+06	8.20E+06	1.82E+07	3.23E+07
2	5.13E+05	2.04E+06	1.13E+07	4.17E+07	1.31E+08
	5.13E+05	2.04E+06	1.13E+07	4.17E+07	1.31E+08
	5.13E+05	2.04E+06	1.13E+07	4.17E+07	1.31E+08
	5.13E+05	2.04E+06	1.13E+07	4.17E+07	1.31E+08
	5.13E+05	2.04E+06	1.13E+07	4.17E+07	1.31E+08

37.	35.	36.	36.	38.
29.	33.	35.	36.	37.
49.	33.	35.	36.	37.
49.	34.	34.	34.	35.

****** Results for DSTEBZ+ZSTEIN+ZUNMTR ******
line 1 with LDA = 401, NB = 1
line 2 with LDA = 401, NB = 16
line 3 with LDA = 401, NB = 32
line 4 with LDA = 401, NB = 48
line 5 with LDA = 401, NB = 64

*** Time in seconds ***

Type \ N	50	100	200	300	400
1	1.00E-01	.46	2.5	6.9	15.
	1.00E-01	.49	2.6	7.2	16.
	.11	.52	2.7	7.4	16.
	.11	.52	2.8	7.5	16.
	9.00E-02	.53	2.8	7.7	17.
2	9.00E-02	.44	2.6	7.5	18.
	1.00E-01	.49	2.5	7.7	18.
	1.00E-01	.49	2.6	8.0	18.
	.11	.50	2.7	8.1	19.
	9.00E-02	.49	2.8	8.2	19.
3	9.00E-02	.48	3.1	10.	23.
	1.00E-01	.49	3.2	10.	23.
	1.00E-01	.50	3.3	10.	23.
	1.00E-01	.53	3.4	11.	24.
	9.00E-02	.53	3.6	11.	25.
4	1.00E-01	.44	2.7	8.2	18.
	8.00E-02	.47	2.8	8.2	18.
	.11	.48	2.9	8.4	18.
	1.00E-01	.53	2.9	8.6	19.
	1.00E-01	.51	3.1	8.7	19.

*** Number of floating-point operations ***

Type \ N	50	100	200	300	400
1	4.92E+05	1.93E+06	7.59E+06	1.69E+07	2.98E+07
	4.92E+05	1.93E+06	7.59E+06	1.69E+07	2.98E+07
	4.92E+05	1.93E+06	7.59E+06	1.69E+07	2.98E+07
	4.92E+05	1.93E+06	7.59E+06	1.69E+07	2.98E+07
	4.92E+05	1.93E+06	7.59E+06	1.69E+07	2.98E+07
2	4.76E+05	1.89E+06	1.07E+07	4.03E+07	1.28E+08
	4.76E+05	1.89E+06	1.07E+07	4.03E+07	1.28E+08
	4.76E+05	1.89E+06	1.07E+07	4.03E+07	1.28E+08
	4.76E+05	1.89E+06	1.07E+07	4.03E+07	1.28E+08
	4.76E+05	1.89E+06	1.07E+07	4.03E+07	1.28E+08

3	5.25E+05	3.59E+06	3.40E+07	1.26E+08	3.04E+08
	5.25E+05	3.59E+06	3.40E+07	1.26E+08	3.04E+08
	5.25E+05	3.59E+06	3.40E+07	1.26E+08	3.04E+08
	5.25E+05	3.59E+06	3.40E+07	1.26E+08	3.04E+08
	5.25E+05	3.59E+06	3.40E+07	1.26E+08	3.04E+08
4	5.14E+05	3.12E+06	1.77E+07	5.50E+07	1.29E+08
	5.14E+05	3.12E+06	1.77E+07	5.50E+07	1.29E+08
	5.14E+05	3.12E+06	1.77E+07	5.50E+07	1.29E+08
	5.14E+05	3.12E+06	1.77E+07	5.50E+07	1.29E+08
	5.14E+05	3.12E+06	1.77E+07	5.50E+07	1.29E+08

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	3.8	2.8	2.3	1.9	1.5
	3.3	2.8	2.1	1.8	1.5
	3.3	2.8	2.1	1.7	1.4
	2.9	2.7	2.1	1.7	1.4
	3.5	2.7	2.0	1.6	1.4
2	3.4	2.9	3.1	3.9	5.5
	3.2	2.8	2.9	3.8	5.1
	3.2	2.8	2.7	3.6	5.0
	3.0	2.6	2.7	3.6	4.8
	3.2	2.5	2.8	3.5	4.8
3	4.0	5.0	7.5	8.9	9.7
	3.1	4.6	7.3	8.4	9.4
	3.1	4.6	7.2	8.4	9.3
	3.3	4.4	7.0	8.2	9.1
	3.3	4.4	6.8	8.0	8.9
4	4.0	4.2	4.4	4.8	5.2
	2.7	4.1	4.3	4.8	5.0
	3.7	4.1	4.2	4.6	4.9
	2.9	3.9	4.2	4.4	4.8
	3.7	3.9	4.0	4.3	4.7

****** Results for HTRIDI ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	0.00E+00	.16	4.4	21.	56.
2	1.00E-02	.15	4.4	21.	56.
3	0.00E+00	.13	4.3	21.	55.
4	1.00E-02	.15	4.4	21.	64.

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	6.75E+05	5.37E+06	4.28E+07	1.44E+08	3.42E+08

3	4.88E+05	3.44E+06	3.34E+07	1.25E+08	3.02E+08
	4.88E+05	3.44E+06	3.34E+07	1.25E+08	3.02E+08
	4.88E+05	3.44E+06	3.34E+07	1.25E+08	3.02E+08
	4.88E+05	3.44E+06	3.34E+07	1.25E+08	3.02E+08
	4.88E+05	3.44E+06	3.34E+07	1.25E+08	3.02E+08
4	4.77E+05	2.97E+06	1.71E+07	5.37E+07	1.27E+08
	4.77E+05	2.97E+06	1.71E+07	5.37E+07	1.27E+08
	4.77E+05	2.97E+06	1.71E+07	5.37E+07	1.27E+08
	4.77E+05	2.97E+06	1.71E+07	5.37E+07	1.27E+08
	4.77E+05	2.97E+06	1.71E+07	5.37E+07	1.27E+08

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	4.9	4.2	3.1	2.4	1.9
	4.9	3.9	2.9	2.3	1.9
	4.5	3.7	2.8	2.3	1.8
	4.5	3.7	2.8	2.3	1.9
	5.5	3.6	2.7	2.2	1.8
2	5.3	4.3	4.1	5.4	7.2
	4.8	3.9	4.2	5.2	7.0
	4.8	3.9	4.1	5.1	7.0
	4.3	3.8	3.9	5.0	6.8
	5.3	3.9	3.8	4.9	6.6
3	5.4	7.2	11.	12.	13.
	4.9	7.0	10.	12.	13.
	4.9	6.9	10.0	12.	13.
	4.9	6.5	9.8	12.	12.
	5.4	6.5	9.4	11.	12.
4	4.8	6.8	6.3	6.5	7.0
	6.0	6.3	6.1	6.5	7.0
	4.3	6.2	5.9	6.4	6.9
	4.8	5.6	5.9	6.2	6.7
	4.8	5.8	5.6	6.2	6.7

****** Results for ZUNGTR+ZSTEDC(V) ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	5.00E-02	.23	1.6	5.2	12.
2	3.00E-02	.21	1.5	4.6	11.
3	3.00E-02	.19	1.4	4.5	10.
4	3.00E-02	.26	1.4	4.8	11.

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	1.13E+06	8.19E+06	6.27E+07	2.06E+08	4.75E+08

2	6.75E+05	5.37E+06	4.28E+07	1.44E+08	3.42E+08
3	6.75E+05	5.37E+06	4.28E+07	1.44E+08	3.42E+08
4	6.75E+05	5.37E+06	4.28E+07	1.44E+08	3.42E+08

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	0.00E+00	34.	9.8	6.8	6.1
2	68.	36.	9.6	6.9	6.1
3	0.00E+00	41.	10.	6.8	6.2
4	68.	36.	9.7	7.0	5.4

****** Results for IMTQL1 ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	1.00E-02	5.00E-02	.23	.47	.84
2	1.00E-02	4.00E-02	.19	.39	.71
3	1.00E-02	4.00E-02	.19	.41	.74
4	1.00E-02	5.00E-02	.17	.37	.68

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	1.07E+05	4.25E+05	1.65E+06	3.67E+06	6.37E+06
2	9.82E+04	3.59E+05	1.45E+06	3.19E+06	5.50E+06
3	9.62E+04	3.77E+05	1.52E+06	3.15E+06	5.78E+06
4	1.01E+05	4.01E+05	1.43E+06	3.16E+06	5.45E+06

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	11.	8.5	7.2	7.8	7.6
2	9.8	9.0	7.6	8.2	7.7
3	9.6	9.4	8.0	7.7	7.8
4	10.	8.0	8.4	8.5	8.0

End of timing run
Total time used = 3879.74 seconds

2	1.05E+06	7.10E+06	5.04E+07	1.63E+08	3.68E+08
3	9.49E+05	6.29E+06	4.44E+07	1.45E+08	3.10E+08
4	1.02E+06	6.94E+06	4.93E+07	1.61E+08	3.68E+08

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	23.	36.	39.	40.	40.
2	35.	34.	34.	35.	34.
3	32.	33.	31.	32.	30.
4	34.	27.	34.	34.	33.

****** Results for ZSTEDC(I)+ZUNMTR ******
with LDA = 401

*** Time in seconds ***

N / Type	50	100	200	300	400
1	2.00E-02	.21	1.6	4.9	11.
2	3.00E-02	.19	1.4	4.6	11.
3	3.00E-02	.19	1.4	4.6	11.
4	3.00E-02	.23	1.4	4.7	11.

*** Number of floating-point operations ***

N / Type	50	100	200	300	400
1	5.07E+05	2.43E+06	1.41E+07	4.08E+07	9.03E+07
2	4.66E+05	2.09E+06	1.08E+07	3.01E+07	6.51E+07
3	3.95E+05	1.77E+06	9.09E+06	2.57E+07	5.21E+07
4	4.54E+05	2.03E+06	1.05E+07	2.96E+07	6.49E+07

*** Speed in megaflops ***

N / Type	50	100	200	300	400
1	25.	12.	8.8	8.4	7.9
2	16.	11.	7.6	6.5	5.9
3	13.	9.3	6.3	5.5	4.9
4	15.	8.8	7.3	6.2	6.0

End of timing run
Total time used = 2860.67 seconds

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Timing the Nonsymmetric Eigenvalue Problem routines
   ZGEHRD, ZHSEQR, ZTREVC, and ZHSEIN

LAPACK VERSION 1.1, released March 31, 1993

The following parameter values will be used:
   Values of N   :      50   100   200   300
   Values of NB  :       1    16    32    48
   Values of NS  :       4     6     8    12
   Values of MAXB:      40    40    40    40
   Values of LDA :     301   301   301   301

Minimum time a subroutine will be timed =      .00 seconds


****** Results for ZGEHRD    ******
    line  1 with LDA =  301, NB =   1
    line  2 with LDA =  301, NB =  16
    line  3 with LDA =  301, NB =  32
    line  4 with LDA =  301, NB =  48

*** Time in seconds ***
       N      50       100       200       300
  Type
     1     4.00E-02  .33       2.9       8.9
           5.00E-02  .34       2.9       9.4
           6.00E-02  .40       2.9       9.9
           8.00E-02  .46       3.2       10.

     3     4.00E-02  .33       2.7       8.9
           6.00E-02  .38       2.9       9.7
           3.00E-02  .42       3.1       9.9
           7.00E-02  .45       3.3       10.

     4     4.00E-02  .33       2.7       9.2
           5.00E-02  .37       2.9       9.9
           5.00E-02  .44       3.1       10.0
           9.00E-02  .47       3.2       10.

     6     4.00E-02  .37       2.7       9.2
           5.00E-02  .42       2.9       9.8
           5.00E-02  .49       3.1       9.7
           9.00E-02  .52       3.2       10.

*** Number of floating-point operations ***
       N      50       100       200       300
  Type
     1     1.67E+06 1.33E+07 1.07E+08 3.60E+08
           1.67E+06 1.33E+07 1.07E+08 3.60E+08
           1.67E+06 1.33E+07 1.07E+08 3.60E+08
           1.67E+06 1.33E+07 1.07E+08 3.60E+08

     3     1.67E+06 1.33E+07 1.07E+08 3.60E+08
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Timing the Nonsymmetric Eigenvalue Problem routines
   ZGEHRD, ZHSEQR, ZTREVC, and ZHSEIN

LAPACK VERSION 2.0, released September 30, 1994

The following parameter values will be used:
   Values of N   :      50   100   200   300
   Values of NB  :       1    16    32    48
   Values of NS  :       4     6     8    12
   Values of MAXB:      40    40    40    40
   Values of LDA :     301   301   301   301

Minimum time a subroutine will be timed =      .00 seconds


****** Results for ZGEHRD    ******
    line  1 with LDA =  301, NB =   1
    line  2 with LDA =  301, NB =  16
    line  3 with LDA =  301, NB =  32
    line  4 with LDA =  301, NB =  48

*** Time in seconds ***
       N      50       100       200       300
  Type
     1     4.00E-02  .25       2.0       6.7
           5.00E-02  .27       2.0       6.9
           4.00E-02  .30       2.2       7.2
           6.00E-02  .31       2.3       7.4

     3     3.00E-02  .24       2.0       6.7
           4.00E-02  .28       2.0       6.9
           4.00E-02  .29       2.2       7.1
           5.00E-02  .33       2.3       7.3

     4     2.00E-02  .24       2.0       6.7
           4.00E-02  .27       2.0       6.9
           3.00E-02  .30       2.2       7.1
           5.00E-02  .31       2.3       7.3

     6     2.00E-02  .23       2.0       6.8
           4.00E-02  .25       2.0       7.0
           4.00E-02  .29       2.2       7.3
           6.00E-02  .31       2.3       7.4

*** Number of floating-point operations ***
       N      50       100       200       300
  Type
     1     1.67E+06 1.33E+07 1.07E+08 3.60E+08
           1.67E+06 1.33E+07 1.07E+08 3.60E+08
           1.67E+06 1.33E+07 1.07E+08 3.60E+08
           1.67E+06 1.33E+07 1.07E+08 3.60E+08

     3     1.67E+06 1.33E+07 1.07E+08 3.60E+08
```

```
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08

    4    1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08

    6    1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
```

*** Speed in megaflops ***

N	50	100	200	300
Type				
1	42.	40.	37.	40.
	33.	39.	37.	38.
	28.	33.	36.	36.
	21.	29.	33.	36.
3	42.	40.	39.	41.
	28.	35.	36.	37.
	56.	32.	35.	36.
	24.	30.	32.	35.
4	42.	40.	40.	39.
	33.	36.	36.	36.
	33.	30.	35.	36.
	19.	28.	33.	36.
6	42.	36.	39.	39.
	33.	32.	36.	37.
	33.	27.	35.	37.
	19.	26.	33.	35.

****** Results for ZHSEQR(E) ******

```
    line  1 with LDA =  301, NB =    1, NS =    4, MAXB=   40
    line  2 with LDA =  301, NB =    1, NS =    6, MAXB=   40
    line  3 with LDA =  301, NB =    1, NS =    8, MAXB=   40
    line  4 with LDA =  301, NB =    1, NS =   12, MAXB=   40
```

*** Time in seconds ***

N	50	100	200	300
Type				
1	.13	.74	4.9	17.
	.15	.77	5.1	17.
	.16	.76	5.0	16.
	.22	1.2	8.2	24.
3	.16	.75	4.8	18.

```
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08

    4    1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08

    6    1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
         1.67E+06 1.33E+07 1.07E+08 3.60E+08
```

*** Speed in megaflops ***

N	50	100	200	300
Type				
1	42.	53.	54.	53.
	33.	49.	54.	52.
	42.	44.	49.	50.
	28.	43.	47.	49.
3	56.	56.	53.	54.
	42.	48.	53.	52.
	42.	46.	49.	50.
	33.	40.	47.	49.
4	83.	56.	53.	54.
	42.	49.	54.	52.
	56.	44.	48.	51.
	33.	43.	47.	49.
6	83.	58.	54.	53.
	42.	53.	53.	51.
	42.	46.	49.	50.
	28.	43.	47.	49.

****** Results for ZHSEQR(E) ******

```
    line  1 with LDA =  301, NB =    1, NS =    4, MAXB=   40
    line  2 with LDA =  301, NB =    1, NS =    6, MAXB=   40
    line  3 with LDA =  301, NB =    1, NS =    8, MAXB=   40
    line  4 with LDA =  301, NB =    1, NS =   12, MAXB=   40
```

*** Time in seconds ***

N	50	100	200	300
Type				
1	9.00E-02	.45	2.7	9.0
	8.00E-02	.44	2.7	8.5
	1.00E-01	.47	2.9	9.6
	.17	.73	5.1	16.
3	9.00E-02	.43	2.8	8.7

	.13	.74	5.3	18.
	.15	.70	5.1	17.
	.21	1.3	8.2	24.
4	.15	.74	4.7	18.
	.14	.75	4.9	17.
	.16	.74	4.8	17.
	.19	1.2	7.9	26.
6	.13	.69	4.8	17.
	.15	.72	4.7	16.
	.14	.71	5.1	17.
	.27	1.2	7.6	25.

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	4.19E+06	3.13E+07	2.24E+08	7.34E+08
	4.91E+06	3.41E+07	2.31E+08	7.31E+08
	5.01E+06	3.59E+07	2.36E+08	7.33E+08
	6.50E+06	3.98E+07	2.85E+08	7.90E+08
3	5.01E+06	3.08E+07	2.17E+08	7.46E+08
	4.54E+06	3.19E+07	2.42E+08	7.47E+08
	4.77E+06	3.33E+07	2.48E+08	7.50E+08
	5.93E+06	4.60E+07	2.92E+08	8.01E+08
4	5.06E+06	3.19E+07	2.11E+08	7.58E+08
	4.85E+06	3.26E+07	2.24E+08	7.21E+08
	5.00E+06	3.36E+07	2.34E+08	7.31E+08
	6.03E+06	4.43E+07	2.66E+08	8.47E+08
6	4.47E+06	3.02E+07	2.15E+08	6.98E+08
	4.80E+06	3.31E+07	2.17E+08	6.82E+08
	5.17E+06	3.40E+07	2.38E+08	7.28E+08
	8.26E+06	4.25E+07	2.61E+08	8.30E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	32.	42.	46.	43.
	33.	44.	46.	43.
	31.	47.	47.	46.
	30.	34.	35.	33.
3	31.	41.	45.	42.
	35.	43.	46.	42.
	32.	48.	49.	45.
	28.	37.	36.	33.
4	34.	43.	45.	43.
	35.	43.	46.	42.
	31.	45.	48.	44.
	32.	36.	34.	32.

	9.00E-02	.40	2.6	8.3
	1.00E-01	.46	2.9	9.6
	.14	.84	5.1	16.
4	1.00E-01	.41	2.8	8.7
	1.00E-01	.45	2.6	8.5
	.11	.47	2.8	9.1
	.15	.84	5.2	16.
6	9.00E-02	.41	2.5	7.4
	9.00E-02	.43	2.3	7.9
	1.00E-01	.44	2.7	8.7
	.15	.79	5.0	15.

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	4.35E+06	3.20E+07	2.26E+08	7.63E+08
	4.69E+06	3.30E+07	2.32E+08	7.39E+08
	5.42E+06	3.63E+07	2.44E+08	7.84E+08
	7.57E+06	3.81E+07	2.70E+08	8.30E+08
3	4.18E+06	3.10E+07	2.27E+08	7.31E+08
	4.56E+06	2.96E+07	2.19E+08	7.19E+08
	5.34E+06	3.46E+07	2.47E+08	7.76E+08
	6.43E+06	4.39E+07	2.71E+08	8.32E+08
4	5.12E+06	3.09E+07	2.28E+08	7.34E+08
	5.27E+06	3.42E+07	2.24E+08	7.34E+08
	5.27E+06	3.54E+07	2.33E+08	7.39E+08
	6.22E+06	4.37E+07	2.76E+08	8.32E+08
6	4.67E+06	3.14E+07	2.09E+08	6.24E+08
	5.01E+06	3.40E+07	1.99E+08	6.81E+08
	5.58E+06	3.34E+07	2.29E+08	7.01E+08
	6.56E+06	4.05E+07	2.65E+08	7.93E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	48.	71.	82.	85.
	59.	75.	86.	87.
	54.	77.	84.	81.
	45.	52.	53.	52.
3	46.	72.	82.	84.
	51.	74.	85.	86.
	53.	75.	84.	81.
	46.	52.	53.	52.
4	51.	75.	80.	85.
	53.	76.	86.	87.
	48.	75.	84.	81.
	41.	52.	53.	52.

6	34.	44.	45.	42.
	32.	46.	46.	42.
	37.	48.	47.	44.
	31.	36.	34.	33.

****** Results for ZHSEQR(S) ******
line 1 with LDA = 301, NB = 1, NS = 4, MAXB= 40
line 2 with LDA = 301, NB = 1, NS = 6, MAXB= 40
line 3 with LDA = 301, NB = 1, NS = 8, MAXB= 40
line 4 with LDA = 301, NB = 1, NS = 12, MAXB= 40

*** Time in seconds ***

N / Type	50	100	200	300
1	.15	1.0	7.3	28.
	.18	1.1	7.9	28.
	.17	1.0	7.9	26.
	.24	1.5	12.	38.
3	.19	.95	7.6	29.
	.17	.94	8.5	29.
	.19	.90	8.1	27.
	.22	1.6	12.	38.
4	.18	1.1	7.4	28.
	.18	1.0	7.9	28.
	.17	.98	7.5	26.
	.24	1.6	11.	39.
6	.15	.84	7.3	26.
	.17	.87	7.8	26.
	.16	.95	7.2	25.
	.28	1.5	11.	36.

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	5.43E+06	4.29E+07	3.18E+08	1.05E+09
	6.13E+06	4.54E+07	3.26E+08	1.04E+09
	6.22E+06	4.70E+07	3.33E+08	1.04E+09
	7.61E+06	5.09E+07	3.84E+08	1.12E+09
3	6.57E+06	4.17E+07	3.12E+08	1.06E+09
	5.87E+06	4.26E+07	3.36E+08	1.07E+09
	6.14E+06	4.33E+07	3.42E+08	1.08E+09
	7.09E+06	5.80E+07	3.93E+08	1.13E+09
4	6.63E+06	4.46E+07	3.03E+08	1.08E+09
	6.20E+06	4.35E+07	3.14E+08	1.04E+09
	6.27E+06	4.50E+07	3.30E+08	1.04E+09
	7.26E+06	5.67E+07	3.58E+08	1.16E+09

6	52.	77.	82.	85.
	56.	79.	86.	86.
	56.	76.	84.	81.
	44.	51.	53.	52.

****** Results for ZHSEQR(S) ******
line 1 with LDA = 301, NB = 1, NS = 4, MAXB= 40
line 2 with LDA = 301, NB = 1, NS = 6, MAXB= 40
line 3 with LDA = 301, NB = 1, NS = 8, MAXB= 40
line 4 with LDA = 301, NB = 1, NS = 12, MAXB= 40

*** Time in seconds ***

N / Type	50	100	200	300
1	1.00E-01	.56	3.8	13.
	1.00E-01	.56	3.7	12.
	1.00E-01	.61	4.1	14.
	.17	.95	7.2	24.
3	.11	.55	3.8	12.
	1.00E-01	.52	3.5	12.
	1.00E-01	.57	4.2	14.
	.16	1.1	7.1	24.
4	.12	.56	3.9	12.
	.12	.59	3.5	12.
	.12	.59	4.0	14.
	.17	1.0	7.2	24.
6	.11	.54	3.5	11.
	1.00E-01	.52	3.2	11.
	.11	.53	3.8	13.
	.17	.95	6.7	22.

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	5.58E+06	4.35E+07	3.23E+08	1.09E+09
	5.86E+06	4.40E+07	3.26E+08	1.05E+09
	6.54E+06	4.77E+07	3.38E+08	1.10E+09
	8.50E+06	5.00E+07	3.68E+08	1.17E+09
3	5.51E+06	4.18E+07	3.22E+08	1.05E+09
	5.83E+06	4.11E+07	3.07E+08	1.03E+09
	6.77E+06	4.59E+07	3.44E+08	1.10E+09
	7.61E+06	5.58E+07	3.64E+08	1.18E+09
4	6.69E+06	4.17E+07	3.23E+08	1.06E+09
	6.84E+06	4.57E+07	3.11E+08	1.04E+09
	6.53E+06	4.66E+07	3.24E+08	1.06E+09
	7.54E+06	5.54E+07	3.68E+08	1.15E+09

```
     6     5.56E+06 3.93E+07 2.96E+08 9.73E+08
           5.81E+06 4.20E+07 2.99E+08 9.55E+08
           6.24E+06 4.22E+07 3.13E+08 1.00E+09
           9.07E+06 5.11E+07 3.36E+08 1.10E+09
```

```
*** Speed in megaflops ***
       N      50       100       200       300
  Type
     1        36.       42.       44.       37.
              34.       42.       41.       37.
              37.       46.       42.       40.
              32.       34.       31.       30.

     3        35.       44.       41.       37.
              35.       45.       39.       37.
              32.       48.       42.       40.
              32.       37.       32.       30.

     4        37.       42.       41.       39.
              34.       42.       40.       37.
              37.       46.       44.       40.
              30.       35.       31.       30.

     6        37.       47.       41.       37.
              34.       48.       38.       37.
              39.       44.       43.       40.
              32.       34.       32.       30.
```

```
****** Results for ZHSEQR(V) ******
    line  1 with LDA =  301, NB =    1, NS =    4, MAXB=   40
    line  2 with LDA =  301, NB =    1, NS =    6, MAXB=   40
    line  3 with LDA =  301, NB =    1, NS =    8, MAXB=   40
    line  4 with LDA =  301, NB =    1, NS =   12, MAXB=   40

*** Time in seconds ***
       N      50       100       200       300
  Type
     1        .23       1.7       15.       52.
              .31       1.8       16.       50.
              .28       1.8       14.       46.
              .38       2.4       22.       65.

     3        .33       1.8       15.       53.
              .26       1.8       16.       52.
              .27       1.8       15.       47.
              .34       2.9       22.       67.

     4        .31       1.9       14.       55.
              .27       1.9       15.       50.
              .28       1.8       14.       46.
              .35       2.8       20.       67.
```

```
     6     5.80E+06 4.09E+07 2.91E+08 9.18E+08
           6.01E+06 4.26E+07 2.77E+08 9.53E+08
           6.58E+06 4.19E+07 3.11E+08 9.71E+08
           7.56E+06 4.94E+07 3.45E+08 1.08E+09
```

```
*** Speed in megaflops ***
       N      50       100       200       300
  Type
     1        56.       78.       84.       86.
              59.       79.       88.       86.
              65.       78.       82.       77.
              50.       53.       51.       49.

     3        50.       76.       85.       86.
              58.       79.       87.       86.
              68.       80.       82.       76.
              48.       53.       51.       49.

     4        56.       74.       84.       86.
              57.       77.       88.       86.
              54.       79.       82.       77.
              44.       53.       51.       49.

     6        53.       76.       84.       86.
              60.       82.       86.       85.
              60.       79.       82.       76.
              44.       52.       52.       50.
```

```
****** Results for ZHSEQR(V) ******
    line  1 with LDA =  301, NB =    1, NS =    4, MAXB=   40
    line  2 with LDA =  301, NB =    1, NS =    6, MAXB=   40
    line  3 with LDA =  301, NB =    1, NS =    8, MAXB=   40
    line  4 with LDA =  301, NB =    1, NS =   12, MAXB=   40

*** Time in seconds ***
       N      50       100       200       300
  Type
     1        .15       .98       7.3       27.
              .16      1.00       8.1       30.
              .15       1.1       8.8       32.
              .27       1.6       13.       43.

     3        .15       .96       7.3       26.
              .16       .95       7.6       29.
              .18       1.1       8.9       32.
              .24       1.8       13.       43.

     4        .19       .96       7.3       26.
              .19       1.0       7.6       29.
              .16       1.0       8.4       31.
              .24       1.7       13.       43.
```

6	.25	1.8	14.	49.
	.26	1.8	14.	47.
	.26	1.8	14.	44.
	.41	2.6	19.	64.

*** Number of floating-point operations ***

Type	N	50	100	200	300
1		1.02E+07	8.22E+07	6.21E+08	2.07E+09
		1.13E+07	8.61E+07	6.33E+08	2.04E+09
		1.11E+07	8.79E+07	6.42E+08	2.03E+09
		1.32E+07	9.28E+07	7.30E+08	2.17E+09
3		1.23E+07	8.00E+07	6.10E+08	2.09E+09
		1.08E+07	8.08E+07	6.53E+08	2.09E+09
		1.11E+07	8.12E+07	6.59E+08	2.10E+09
		1.24E+07	1.06E+08	7.48E+08	2.18E+09
4		1.24E+07	8.55E+07	5.92E+08	2.14E+09
		1.13E+07	8.25E+07	6.09E+08	2.03E+09
		1.13E+07	8.43E+07	6.35E+08	2.03E+09
		1.27E+07	1.03E+08	6.80E+08	2.24E+09
6		1.04E+07	7.53E+07	5.80E+08	1.92E+09
		1.06E+07	7.94E+07	5.80E+08	1.87E+09
		1.12E+07	7.92E+07	6.04E+08	1.95E+09
		1.56E+07	9.37E+07	6.41E+08	2.13E+09

*** Speed in megaflops ***

Type	N	50	100	200	300
1		44.	48.	42.	40.
		36.	49.	41.	41.
		40.	50.	45.	44.
		35.	38.	34.	33.
3		37.	45.	41.	39.
		42.	44.	41.	40.
		41.	44.	44.	44.
		37.	36.	34.	32.
4		40.	45.	42.	39.
		42.	43.	42.	40.
		40.	47.	45.	44.
		36.	37.	34.	33.
6		41.	43.	42.	39.
		41.	43.	42.	40.
		43.	44.	45.	44.
		38.	36.	35.	33.

6	.16	.93	6.6	23.
	.16	.95	6.9	27.
	.17	.96	8.1	28.
	.23	1.6	12.	39.

*** Number of floating-point operations ***

Type	N	50	100	200	300
1		1.04E+07	8.34E+07	6.31E+08	2.14E+09
		1.08E+07	8.33E+07	6.32E+08	2.06E+09
		1.17E+07	8.92E+07	6.53E+08	2.15E+09
		1.47E+07	9.13E+07	7.01E+08	2.26E+09
3		1.03E+07	8.01E+07	6.29E+08	2.07E+09
		1.07E+07	7.78E+07	5.97E+08	2.02E+09
		1.22E+07	8.59E+07	6.63E+08	2.14E+09
		1.32E+07	1.02E+08	6.93E+08	2.27E+09
4		1.26E+07	7.99E+07	6.30E+08	2.08E+09
		1.27E+07	8.66E+07	6.03E+08	2.04E+09
		1.18E+07	8.72E+07	6.24E+08	2.07E+09
		1.32E+07	1.01E+08	7.00E+08	2.23E+09
6		1.08E+07	7.83E+07	5.68E+08	1.81E+09
		1.10E+07	8.06E+07	5.38E+08	1.87E+09
		1.18E+07	7.84E+07	6.00E+08	1.89E+09
		1.31E+07	9.01E+07	6.57E+08	2.09E+09

*** Speed in megaflops ***

Type	N	50	100	200	300
1		69.	85.	86.	79.
		67.	83.	78.	69.
		78.	82.	74.	67.
		54.	57.	55.	52.
3		69.	83.	86.	79.
		67.	82.	79.	69.
		68.	81.	74.	67.
		55.	57.	55.	52.
4		66.	83.	86.	79.
		67.	84.	79.	69.
		74.	83.	74.	67.
		55.	58.	55.	52.
6		68.	84.	86.	79.
		69.	85.	78.	70.
		69.	82.	74.	67.
		57.	56.	55.	53.

****** Results for ZTREVC(L) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	1.00E-02	7.00E-02	.47	1.5
3	1.00E-02	7.00E-02	.46	1.5
4	1.00E-02	7.00E-02	.45	1.5
6	1.00E-02	8.00E-02	.47	1.4

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.77E+05	1.37E+06	1.08E+07	3.64E+07
3	1.77E+05	1.37E+06	1.08E+07	3.64E+07
4	1.77E+05	1.37E+06	1.08E+07	3.64E+07
6	1.77E+05	1.37E+06	1.08E+07	3.64E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	18.	20.	23.	25.
3	18.	20.	24.	24.
4	18.	20.	24.	25.
6	18.	17.	23.	25.

****** Results for ZTREVC(R) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	1.00E-02	6.00E-02	.61	3.1
3	1.00E-02	6.00E-02	.68	3.2
4	1.00E-02	6.00E-02	.63	3.2
6	1.00E-02	9.00E-02	.91	3.3

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.77E+05	1.37E+06	1.08E+07	3.64E+07
3	1.77E+05	1.37E+06	1.08E+07	3.64E+07
4	1.77E+05	1.37E+06	1.08E+07	3.64E+07
6	1.77E+05	1.37E+06	1.08E+07	3.64E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	18.	23.	18.	12.
3	18.	23.	16.	11.
4	18.	23.	17.	11.
6	18.	15.	12.	11.

****** Results for ZTREVC(L) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	1.00E-02	5.00E-02	.32	1.0
3	1.00E-02	5.00E-02	.32	1.0
4	1.00E-02	4.00E-02	.33	1.0
6	1.00E-02	6.00E-02	.36	1.1

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.77E+05	1.37E+06	1.08E+07	3.64E+07
3	1.77E+05	1.37E+06	1.08E+07	3.64E+07
4	1.77E+05	1.37E+06	1.08E+07	3.64E+07
6	1.77E+05	1.37E+06	1.08E+07	3.64E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	18.	27.	34.	35.
3	18.	27.	34.	35.
4	18.	34.	33.	35.
6	18.	23.	30.	34.

****** Results for ZTREVC(R) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	1.00E-02	4.00E-02	.49	2.4
3	1.00E-02	4.00E-02	.50	2.4
4	1.00E-02	4.00E-02	.50	2.4
6	1.00E-02	6.00E-02	.76	2.6

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.77E+05	1.37E+06	1.08E+07	3.64E+07
3	1.77E+05	1.37E+06	1.08E+07	3.64E+07
4	1.77E+05	1.37E+06	1.08E+07	3.64E+07
6	1.77E+05	1.37E+06	1.08E+07	3.64E+07

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	18.	34.	22.	15.
3	18.	34.	22.	15.
4	18.	34.	22.	15.
6	18.	23.	14.	14.

****** Results for ZHSEIN(L) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	9.00E-02	.56	4.5	14.
3	7.00E-02	.59	4.5	14.
4	7.00E-02	.59	4.4	14.
6	8.00E-02	.59	4.3	15.

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.06E+06	8.23E+06	6.49E+07	2.18E+08
3	1.06E+06	8.23E+06	6.49E+07	2.18E+08
4	1.06E+06	8.23E+06	6.49E+07	2.18E+08
6	1.06E+06	8.23E+06	6.49E+07	2.18E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	12.	15.	14.	15.
3	15.	14.	15.	15.
4	15.	14.	15.	15.
6	13.	14.	15.	15.

****** Results for ZHSEIN(R) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	7.00E-02	.56	7.0	28.
3	8.00E-02	.63	7.2	28.
4	8.00E-02	.61	6.9	28.
6	.11	.90	7.1	28.

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.06E+06	8.23E+06	6.49E+07	2.18E+08
3	1.06E+06	8.23E+06	6.49E+07	2.18E+08
4	1.06E+06	8.23E+06	6.49E+07	2.18E+08
6	1.06E+06	8.23E+06	6.49E+07	2.18E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	15.	15.	9.3	7.8
3	13.	13.	9.0	7.9

****** Results for ZHSEIN(L) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	4.00E-02	.42	3.5	11.
3	4.00E-02	.42	3.5	11.
4	4.00E-02	.43	3.5	11.
6	5.00E-02	.45	3.4	11.

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.06E+06	8.23E+06	6.49E+07	2.18E+08
3	1.06E+06	8.23E+06	6.49E+07	2.18E+08
4	1.06E+06	8.23E+06	6.49E+07	2.18E+08
6	1.06E+06	8.23E+06	6.49E+07	2.18E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	26.	20.	19.	19.
3	26.	20.	19.	19.
4	26.	19.	19.	19.
6	21.	18.	19.	19.

****** Results for ZHSEIN(R) ******
with LDA = 301

*** Time in seconds ***

Type \ N	50	100	200	300
1	5.00E-02	.43	5.4	18.
3	5.00E-02	.44	5.4	18.
4	5.00E-02	.43	5.4	18.
6	8.00E-02	.68	5.3	18.

*** Number of floating-point operations ***

Type \ N	50	100	200	300
1	1.06E+06	8.23E+06	6.49E+07	2.18E+08
3	1.06E+06	8.23E+06	6.49E+07	2.18E+08
4	1.06E+06	8.23E+06	6.49E+07	2.18E+08
6	1.06E+06	8.23E+06	6.49E+07	2.18E+08

*** Speed in megaflops ***

Type \ N	50	100	200	300
1	21.	19.	12.	12.
3	21.	19.	12.	12.

4	13.	13.	9.4	7.8
6	9.6	9.1	9.1	7.9

****** Results for CORTH ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	4.00E-02	.34	4.4	19.
3	3.00E-02	.35	4.1	20.
4	4.00E-02	.35	4.2	20.
6	4.00E-02	.34	4.6	19.

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	1.64E+06	1.32E+07	1.06E+08	3.59E+08
3	1.64E+06	1.32E+07	1.06E+08	3.59E+08
4	1.64E+06	1.32E+07	1.06E+08	3.59E+08
6	1.64E+06	1.32E+07	1.06E+08	3.59E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	41.	39.	24.	19.
3	55.	38.	26.	18.
4	41.	38.	25.	18.
6	41.	39.	23.	19.

****** Results for COMQR ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	.13	.90	7.8	29.
3	.11	.94	7.9	30.
4	.13	.91	7.8	30.
6	.11	.87	7.3	28.

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	3.88E+06	2.75E+07	2.02E+08	6.49E+08
3	3.74E+06	2.72E+07	2.04E+08	6.71E+08
4	4.04E+06	2.72E+07	2.02E+08	6.81E+08
6	3.72E+06	2.70E+07	1.91E+08	6.38E+08

*** Speed in megaflops ***

N / Type	50	100	200	300

4	21.	19.	12.	12.
6	13.	12.	12.	12.

****** Results for CORTH ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	2.00E-02	.14	1.4	4.8
3	2.00E-02	.16	1.4	4.8
4	2.00E-02	.16	1.4	4.8
6	2.00E-02	.16	1.4	4.8

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	1.64E+06	1.32E+07	1.06E+08	3.59E+08
3	1.64E+06	1.32E+07	1.06E+08	3.59E+08
4	1.64E+06	1.32E+07	1.06E+08	3.59E+08
6	1.64E+06	1.32E+07	1.06E+08	3.59E+08

*** Speed in megaflops ***

N / Type	50	100	200	300
1	82.	95.	77.	75.
3	82.	83.	78.	75.
4	82.	83.	78.	75.
6	82.	83.	78.	75.

****** Results for COMQR ******
with LDA = 301

*** Time in seconds ***

N / Type	50	100	200	300
1	8.00E-02	.48	3.2	10.
3	6.00E-02	.47	3.3	10.
4	8.00E-02	.47	3.3	11.
6	6.00E-02	.45	3.1	9.2

*** Number of floating-point operations ***

N / Type	50	100	200	300
1	3.82E+06	2.82E+07	2.00E+08	6.79E+08
3	3.89E+06	2.75E+07	2.02E+08	6.79E+08
4	4.19E+06	2.72E+07	2.04E+08	6.82E+08
6	3.78E+06	2.75E+07	1.97E+08	6.29E+08

*** Speed in megaflops ***

N / Type	50	100	200	300

1	30.	31.	26.	22.
3	34.	29.	26.	23.
4	31.	30.	26.	23.
6	34.	31.	26.	23.

****** Results for COMQR2 ******
with LDA = 301

*** Time in seconds ***

N	50	100	200	300
Type				
1	.52	4.7	44.	1.59E+02
3	.51	4.6	45.	1.69E+02
4	.54	4.6	44.	1.67E+02
6	.50	4.5	45.	1.63E+02

*** Number of floating-point operations ***

N	50	100	200	300
Type				
1	1.65E+07	1.25E+08	9.43E+08	3.13E+09
3	1.65E+07	1.22E+08	9.65E+08	3.22E+09
4	1.72E+07	1.21E+08	9.63E+08	3.22E+09
6	1.63E+07	1.25E+08	9.65E+08	3.18E+09

*** Speed in megaflops ***

N	50	100	200	300
Type				
1	32.	26.	21.	20.
3	32.	27.	22.	19.
4	32.	26.	22.	19.
6	33.	28.	22.	20.

****** Results for CINVIT ******
with LDA = 301

*** Time in seconds ***

N	50	100	200	300
Type				
1	.11	1.0	13.	71.
3	.11	1.1	12.	76.
4	.11	1.2	12.	72.
6	.11	1.1	12.	71.

*** Number of floating-point operations ***

N	50	100	200	300
Type				
1	1.26E+06	9.03E+06	6.81E+07	2.25E+08
3	1.26E+06	9.03E+06	6.81E+07	2.25E+08
4	1.26E+06	9.03E+06	6.81E+07	2.25E+08
6	1.26E+06	9.03E+06	6.81E+07	2.25E+08

*** Speed in megaflops ***

1	48.	59.	62.	65.
3	65.	59.	62.	65.
4	52.	58.	62.	65.
6	63.	61.	64.	68.

****** Results for COMQR2 ******
with LDA = 301

*** Time in seconds ***

N	50	100	200	300
Type				
1	.25	2.1	16.	51.
3	.27	2.0	16.	51.
4	.26	2.1	16.	52.
6	.26	2.1	16.	51.

*** Number of floating-point operations ***

N	50	100	200	300
Type				
1	1.64E+07	1.26E+08	9.55E+08	3.18E+09
3	1.68E+07	1.21E+08	9.70E+08	3.21E+09
4	1.72E+07	1.24E+08	9.58E+08	3.28E+09
6	1.63E+07	1.25E+08	9.66E+08	3.23E+09

*** Speed in megaflops ***

N	50	100	200	300
Type				
1	66.	59.	61.	63.
3	62.	59.	61.	63.
4	66.	59.	61.	63.
6	63.	59.	61.	63.

****** Results for CINVIT ******
with LDA = 301

*** Time in seconds ***

N	50	100	200	300
Type				
1	6.00E-02	.46	4.0	21.
3	5.00E-02	.45	4.0	21.
4	5.00E-02	.46	4.0	21.
6	6.00E-02	.45	4.0	21.

*** Number of floating-point operations ***

N	50	100	200	300
Type				
1	1.26E+06	9.03E+06	6.81E+07	2.25E+08
3	1.26E+06	9.03E+06	6.81E+07	2.25E+08
4	1.26E+06	9.03E+06	6.81E+07	2.25E+08
6	1.26E+06	9.03E+06	6.81E+07	2.25E+08

*** Speed in megaflops ***

N Type	50	100	200	300
1	11.	8.6	5.4	3.2
3	11.	8.4	5.5	3.0
4	11.	7.7	5.7	3.1
6	11.	8.4	5.5	3.2

End of timing run
Total time used = 4357.76 seconds

N Type	50	100	200	300
1	21.	20.	17.	11.
3	25.	20.	17.	11.
4	25.	20.	17.	11.
6	21.	20.	17.	11.

End of timing run
Total time used = 2206.99 seconds

Timing the Generalized Eigenvalue Problem routines
ZGGHRD, ZHGEQZ, and ZTGEVC

LAPACK VERSION 1.1, released March 31, 1993

The following parameter values will be used:

Values of N :	50	100	150	200
Values of NB :	10	10	10	10
Values of NS :	2	2	4	4
Values of MAXB:	200	2	4	4
Values of NBMIN:	200	200	200	10
Values of MINBL:	200	200	200	10
Values of LDA :	201	201	201	201

Minimum time a subroutine will be timed = .00 seconds

****** Results for ZGGHRD(N) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N	50	100	150	200
Type				
1	.14	1.1	3.9	10.
2	.14	1.0	4.0	9.8
3	.14	1.1	4.0	9.8
4	.14	1.1	3.9	9.9

*** Number of floating-point operations ***

N	50	100	150	200
Type				
1	3.95E+06	3.18E+07	1.08E+08	2.55E+08
2	3.95E+06	3.18E+07	1.08E+08	2.55E+08
3	3.95E+06	3.18E+07	1.08E+08	2.55E+08
4	3.95E+06	3.18E+07	1.08E+08	2.55E+08

*** Speed in megaflops ***

N	50	100	150	200
Type				
1	28.	30.	27.	26.
2	28.	31.	27.	26.
3	28.	29.	27.	26.
4	28.	28.	28.	26.

****** Results for ZGGHRD(Q) ******
with LDA= 201, NB= 10

*** Time in seconds ***

N	50	100	150	200
Type				
1	.22	1.5	5.3	13.
2	.19	1.5	5.4	13.

Timing the Generalized Eigenvalue Problem routines
ZGGHRD, ZHGEQZ, and ZTGEVC

LAPACK VERSION 2.0, released September 30, 1994

The following parameter values will be used:

Values of N :	10	20	30	40
Values of NB :	10	10	10	10
Values of NS :	2	2	4	4
Values of MAXB:	100	2	4	4
Values of NBMIN:	100	100	100	10
Values of MINBL:	100	100	100	10
Values of LDA :	81	81	81	81

Minimum time a subroutine will be timed = .05 seconds

****** Results for ZGGHRD(N) ******
with LDA= 81, NB= 10

*** Time in seconds ***

N	10	20	30	40
Type				
1	1.22E-03	6.00E-03	2.00E-02	4.00E-02
2	1.15E-03	6.67E-03	1.75E-02	4.00E-02
3	1.18E-03	6.67E-03	1.75E-02	4.00E-02
4	1.15E-03	6.67E-03	2.00E-02	3.00E-02

*** Number of floating-point operations ***

N	10	20	30	40
Type				
1	2.95E+04	2.47E+05	8.46E+05	2.02E+06
2	2.95E+04	2.47E+05	8.46E+05	2.02E+06
3	2.95E+04	2.47E+05	8.46E+05	2.02E+06
4	2.95E+04	2.47E+05	8.46E+05	2.02E+06

*** Speed in megaflops ***

N	10	20	30	40
Type				
1	24.	41.	42.	50.
2	26.	37.	48.	50.
3	25.	37.	48.	50.
4	26.	37.	42.	67.

****** Results for ZGGHRD(Q) ******
with LDA= 81, NB= 10

*** Time in seconds ***

N	10	20	30	40
Type				
1	1.46E-03	8.57E-03	2.33E-02	5.00E-02
2	1.28E-03	8.57E-03	2.33E-02	5.00E-02

```
     3      .20       1.5       5.1       13.
     4      .19       1.5       5.1       13.

*** Number of floating-point operations ***
         N      50        100       150       200
  Type
     1      5.13E+06  4.15E+07  1.41E+08  3.34E+08
     2      5.13E+06  4.15E+07  1.41E+08  3.34E+08
     3      5.13E+06  4.15E+07  1.41E+08  3.34E+08
     4      5.13E+06  4.15E+07  1.41E+08  3.34E+08

*** Speed in megaflops ***
         N      50        100       150       200
  Type
     1      23.       28.       26.       25.
     2      27.       28.       26.       25.
     3      26.       28.       27.       25.
     4      27.       27.       28.       25.


****** Results for ZGGHRD(Z)   ******
    with    LDA=  201,     NB=   10

*** Time in seconds ***
         N      50        100       150       200
  Type
     1      .19       1.4       4.8       12.
     2      .18       1.3       4.7       12.
     3      .18       1.3       4.6       12.
     4      .17       1.4       4.9       12.

*** Number of floating-point operations ***
         N      50        100       150       200
  Type
     1      5.13E+06  4.15E+07  1.41E+08  3.34E+08
     2      5.13E+06  4.15E+07  1.41E+08  3.34E+08
     3      5.13E+06  4.15E+07  1.41E+08  3.34E+08
     4      5.13E+06  4.15E+07  1.41E+08  3.34E+08

*** Speed in megaflops ***
         N      50        100       150       200
  Type
     1      27.       30.       29.       28.
     2      28.       32.       30.       28.
     3      28.       31.       31.       28.
     4      30.       29.       29.       28.


****** Results for ZGGHRD(Q,Z) ******
    with    LDA=  201,     NB=   10

*** Time in seconds ***
         N      50        100       150       200
  Type
```

```
     3      1.28E-03  8.57E-03  2.33E-02  5.00E-02
     4      1.28E-03  8.57E-03  2.33E-02  5.00E-02

*** Number of floating-point operations ***
         N      10        20        30        40
  Type
     1      3.67E+04  3.16E+05  1.09E+06  2.61E+06
     2      3.67E+04  3.16E+05  1.09E+06  2.61E+06
     3      3.67E+04  3.16E+05  1.09E+06  2.61E+06
     4      3.67E+04  3.16E+05  1.09E+06  2.61E+06

*** Speed in megaflops ***
         N      10        20        30        40
  Type
     1      25.       37.       47.       52.
     2      29.       37.       47.       52.
     3      29.       37.       47.       52.
     4      29.       37.       47.       52.


****** Results for ZGGHRD(Z)   ******
    with    LDA=   81,     NB=   10

*** Time in seconds ***
         N      10        20        30        40
  Type
     1      1.20E-03  7.50E-03  2.00E-02  4.50E-02
     2      1.15E-03  6.67E-03  2.00E-02  4.50E-02
     3      1.13E-03  6.67E-03  2.00E-02  4.50E-02
     4      1.11E-03  6.67E-03  2.00E-02  4.00E-02

*** Number of floating-point operations ***
         N      10        20        30        40
  Type
     1      3.67E+04  3.16E+05  1.09E+06  2.61E+06
     2      3.67E+04  3.16E+05  1.09E+06  2.61E+06
     3      3.67E+04  3.16E+05  1.09E+06  2.61E+06
     4      3.67E+04  3.16E+05  1.09E+06  2.61E+06

*** Speed in megaflops ***
         N      10        20        30        40
  Type
     1      31.       42.       54.       58.
     2      32.       47.       54.       58.
     3      32.       47.       54.       58.
     4      33.       47.       54.       65.


****** Results for ZGGHRD(Q,Z) ******
    with    LDA=   81,     NB=   10

*** Time in seconds ***
         N      10        20        30        40
  Type
```

1	.24	1.8	6.3	15.
2	.22	1.7	6.5	16.
3	.23	1.7	6.4	16.
4	.22	1.8	6.4	16.

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	6.30E+06	5.12E+07	1.74E+08	4.13E+08
2	6.30E+06	5.12E+07	1.74E+08	4.13E+08
3	6.30E+06	5.12E+07	1.74E+08	4.13E+08
4	6.30E+06	5.12E+07	1.74E+08	4.13E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
1	26.	29.	28.	27.
2	29.	30.	27.	26.
3	27.	29.	27.	26.
4	29.	28.	27.	26.

****** Results for ZHGEQZ(E) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	.22	1.3	4.2	11.
2	.22	1.3	4.7	11.
3	.20	1.3	4.6	11.
4	.19	1.3	4.3	11.

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	6.77E+06	4.67E+07	1.37E+08	3.40E+08
2	6.48E+06	4.58E+07	1.47E+08	3.39E+08
3	6.48E+06	4.49E+07	1.45E+08	3.19E+08
4	5.78E+06	4.54E+07	1.33E+08	3.37E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
1	31.	35.	32.	31.
2	29.	35.	31.	31.
3	32.	35.	32.	30.
4	30.	34.	31.	30.

****** Results for ZHGEQZ(S) ******
with LDA= 201

*** Time in seconds ***

1	1.36E-03	8.57E-03	2.00E-02	5.50E-02
2	1.43E-03	1.00E-02	2.67E-02	6.00E-02
3	1.36E-03	8.57E-03	3.00E-02	6.00E-02
4	1.36E-03	8.57E-03	2.67E-02	5.50E-02

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	4.39E+04	3.84E+05	1.33E+06	3.20E+06
2	4.39E+04	3.84E+05	1.33E+06	3.20E+06
3	4.39E+04	3.84E+05	1.33E+06	3.20E+06
4	4.39E+04	3.84E+05	1.33E+06	3.20E+06

*** Speed in megaflops ***

N / Type	10	20	30	40
1	32.	45.	67.	58.
2	31.	38.	50.	53.
3	32.	45.	44.	53.
4	32.	45.	50.	58.

****** Results for ZHGEQZ(E) ******
with LDA= 81

*** Time in seconds ***

N / Type	10	20	30	40
1	2.61E-03	1.00E-02	2.33E-02	5.00E-02
2	2.31E-03	1.00E-02	2.33E-02	4.50E-02
3	2.50E-03	1.20E-02	2.00E-02	4.50E-02
4	2.50E-03	1.20E-02	2.00E-02	4.50E-02

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	6.10E+04	5.11E+05	1.59E+06	3.19E+06
2	7.48E+04	4.97E+05	1.51E+06	3.08E+06
3	8.58E+04	5.51E+05	1.59E+06	3.26E+06
4	8.41E+04	5.61E+05	1.57E+06	2.99E+06

*** Speed in megaflops ***

N / Type	10	20	30	40
1	23.	51.	68.	64.
2	32.	50.	65.	68.
3	34.	46.	79.	72.
4	34.	47.	78.	66.

****** Results for ZHGEQZ(S) ******
with LDA= 81

*** Time in seconds ***

N / Type	50	100	150	200
1	.27	1.8	6.4	18.
2	.26	1.9	7.6	17.
3	.25	1.7	6.9	17.
4	.22	1.9	6.5	18.

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	8.72E+06	6.07E+07	1.83E+08	4.59E+08
2	8.57E+06	6.21E+07	2.03E+08	4.50E+08
3	8.37E+06	5.87E+07	1.95E+08	4.42E+08
4	7.69E+06	6.10E+07	1.83E+08	4.52E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
1	32.	34.	29.	25.
2	33.	32.	27.	26.
3	33.	35.	28.	26.
4	35.	33.	28.	25.

****** Results for ZHGEQZ(Q) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	.38	2.5	9.0	25.
2	.36	2.8	9.8	24.
3	.35	2.5	9.6	24.
4	.32	2.7	8.8	25.

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	1.27E+07	8.97E+07	2.73E+08	6.84E+08
2	1.25E+07	9.19E+07	3.02E+08	6.70E+08
3	1.22E+07	8.68E+07	2.89E+08	6.58E+08
4	1.12E+07	9.03E+07	2.72E+08	6.73E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
1	33.	36.	30.	28.
2	35.	33.	31.	28.
3	35.	34.	30.	28.
4	35.	34.	31.	27.

****** Results for ZHGEQZ(Z) ******
with LDA= 201

N / Type	10	20	30	40
1	2.14E-03	1.20E-02	3.00E-02	5.50E-02
2	2.40E-03	1.00E-02	3.00E-02	5.00E-02
3	2.73E-03	1.20E-02	2.67E-02	6.00E-02
4	2.61E-03	1.20E-02	2.67E-02	4.50E-02

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	7.54E+04	6.33E+05	2.00E+06	4.25E+06
2	8.45E+04	5.97E+05	1.86E+06	3.97E+06
3	9.81E+04	6.54E+05	2.00E+06	4.20E+06
4	9.31E+04	6.93E+05	1.94E+06	3.99E+06

*** Speed in megaflops ***

N / Type	10	20	30	40
1	35.	53.	67.	77.
2	35.	60.	62.	79.
3	36.	54.	75.	70.
4	36.	58.	73.	89.

****** Results for ZHGEQZ(Q) ******
with LDA= 81

*** Time in seconds ***

N / Type	10	20	30	40
1	2.31E-03	1.40E-02	3.50E-02	7.00E-02
2	2.61E-03	1.40E-02	3.00E-02	7.00E-02
3	2.86E-03	1.40E-02	3.00E-02	7.00E-02
4	2.73E-03	1.50E-02	3.50E-02	6.00E-02

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	1.01E+05	8.92E+05	2.88E+06	6.17E+06
2	1.13E+05	8.42E+05	2.68E+06	5.77E+06
3	1.32E+05	9.21E+05	2.87E+06	6.10E+06
4	1.25E+05	9.77E+05	2.79E+06	5.79E+06

*** Speed in megaflops ***

N / Type	10	20	30	40
1	44.	64.	82.	88.
2	43.	60.	89.	82.
3	46.	66.	96.	87.
4	46.	65.	80.	96.

****** Results for ZHGEQZ(Z) ******
with LDA= 81

*** Time in seconds ***

Type \ N	50	100	150	200
1	.36	2.5	8.9	24.
2	.35	2.5	9.7	24.
3	.33	2.5	9.6	24.
4	.32	2.8	8.7	24.

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	1.27E+07	8.98E+07	2.73E+08	6.84E+08
2	1.25E+07	9.20E+07	3.02E+08	6.70E+08
3	1.22E+07	8.69E+07	2.89E+08	6.59E+08
4	1.12E+07	9.03E+07	2.72E+08	6.73E+08

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	35.	36.	31.	28.
2	36.	37.	31.	28.
3	37.	35.	30.	28.
4	35.	32.	31.	28.

****** Results for ZHGEQZ(Q,Z) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	.47	3.3	11.	32.
2	.46	3.1	13.	31.
3	.45	3.0	12.	31.
4	.43	3.5	11.	31.

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	1.68E+07	1.19E+08	3.62E+08	9.09E+08
2	1.65E+07	1.22E+08	4.01E+08	8.90E+08
3	1.61E+07	1.15E+08	3.84E+08	8.75E+08
4	1.48E+07	1.20E+08	3.61E+08	8.95E+08

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	36.	36.	32.	29.
2	36.	39.	31.	29.
3	36.	38.	31.	28.
4	34.	34.	32.	29.

*** Time in seconds ***

Type \ N	10	20	30	40
1	2.40E-03	1.20E-02	3.50E-02	7.00E-02
2	2.61E-03	1.20E-02	3.50E-02	6.00E-02
3	3.00E-03	1.00E-02	3.50E-02	7.00E-02
4	2.86E-03	1.50E-02	3.50E-02	7.00E-02

*** Number of floating-point operations ***

Type \ N	10	20	30	40
1	1.02E+05	8.95E+05	2.88E+06	6.18E+06
2	1.14E+05	8.44E+05	2.68E+06	5.78E+06
3	1.32E+05	9.24E+05	2.87E+06	6.11E+06
4	1.25E+05	9.80E+05	2.80E+06	5.80E+06

*** Speed in megaflops ***

Type \ N	10	20	30	40
1	42.	75.	82.	88.
2	44.	70.	77.	96.
3	44.	92.	82.	87.
4	44.	65.	80.	83.

****** Results for ZHGEQZ(Q,Z) ******
with LDA= 81

*** Time in seconds ***

Type \ N	10	20	30	40
1	2.61E-03	1.50E-02	4.50E-02	9.00E-02
2	2.86E-03	1.50E-02	4.00E-02	9.00E-02
3	2.73E-03	1.50E-02	4.00E-02	9.00E-02
4	3.16E-03	1.50E-02	4.00E-02	8.00E-02

*** Number of floating-point operations ***

Type \ N	10	20	30	40
1	1.27E+05	1.15E+06	3.76E+06	8.10E+06
2	1.43E+05	1.09E+06	3.49E+06	7.57E+06
3	1.66E+05	1.19E+06	3.74E+06	8.00E+06
4	1.57E+05	1.26E+06	3.65E+06	7.59E+06

*** Speed in megaflops ***

Type \ N	10	20	30	40
1	49.	77.	84.	90.
2	50.	73.	87.	84.
3	61.	79.	94.	89.
4	50.	84.	91.	95.

****** Results for ZTGEVC(A,L) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	2.00E-02	8.00E-02	.22	.53
2	1.00E-02	7.00E-02	.24	.53
3	1.00E-02	7.00E-02	.23	.54
4	1.00E-02	8.00E-02	.25	.54

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	3.87E+05	2.88E+06	9.48E+06	2.22E+07
2	3.87E+05	2.88E+06	9.48E+06	2.22E+07
3	3.87E+05	2.88E+06	9.48E+06	2.22E+07
4	3.87E+05	2.88E+06	9.48E+06	2.22E+07

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	19.	36.	43.	42.
2	39.	41.	40.	42.
3	39.	41.	41.	41.
4	39.	36.	38.	41.

****** Results for ZTGEVC(B,L) ******
with LDA= 201

*** Time in seconds ***

Type \ N	50	100	150	200
1	2.00E-02	.18	.61	1.3
2	3.00E-02	.17	.58	1.3
3	3.00E-02	.17	.59	1.4
4	4.00E-02	.18	.58	1.4

*** Number of floating-point operations ***

Type \ N	50	100	150	200
1	9.01E+05	6.94E+06	2.31E+07	5.44E+07
2	9.01E+05	6.94E+06	2.31E+07	5.44E+07
3	9.01E+05	6.94E+06	2.31E+07	5.44E+07
4	9.01E+05	6.94E+06	2.31E+07	5.44E+07

*** Speed in megaflops ***

Type \ N	50	100	150	200
1	45.	39.	38.	42.
2	30.	41.	40.	40.
3	30.	41.	39.	39.
4	23.	39.	40.	40.

****** Results for ZTGEVC(L,A) ******
with LDA= 81

*** Time in seconds ***

Type \ N	10	20	30	40
1	2.62E-04	1.02E-03	2.22E-03	4.62E-03
2	2.33E-04	9.23E-04	2.31E-03	4.29E-03
3	2.45E-04	9.52E-04	2.40E-03	4.29E-03
4	2.33E-04	1.05E-03	2.40E-03	4.62E-03

*** Number of floating-point operations ***

Type \ N	10	20	30	40
1	4.86E+03	3.00E+04	9.15E+04	2.05E+05
2	4.86E+03	3.00E+04	9.15E+04	2.05E+05
3	4.86E+03	3.00E+04	9.15E+04	2.05E+05
4	4.86E+03	3.00E+04	9.15E+04	2.05E+05

*** Speed in megaflops ***

Type \ N	10	20	30	40
1	19.	30.	41.	44.
2	21.	33.	40.	48.
3	20.	32.	38.	48.
4	21.	29.	38.	44.

****** Results for ZTGEVC(L,B) ******
with LDA= 81

*** Time in seconds ***

Type \ N	10	20	30	40
1	3.82E-04	1.62E-03	4.29E-03	8.57E-03
2	3.77E-04	1.67E-03	4.29E-03	1.00E-02
3	3.82E-04	1.62E-03	4.29E-03	6.25E-03
4	3.75E-04	1.67E-03	4.29E-03	8.57E-03

*** Number of floating-point operations ***

Type \ N	10	20	30	40
1	9.40E+03	6.42E+04	2.04E+05	4.70E+05
2	9.40E+03	6.42E+04	2.04E+05	4.70E+05
3	9.40E+03	6.42E+04	2.04E+05	4.70E+05
4	9.40E+03	6.42E+04	2.04E+05	4.70E+05

*** Speed in megaflops ***

Type \ N	10	20	30	40
1	25.	40.	48.	55.
2	25.	39.	48.	47.
3	25.	40.	48.	75.
4	25.	39.	48.	55.

****** Results for ZTGEVC(A,R) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	1.00E-02	8.00E-02	.24	.50
2	0.00E+00	7.00E-02	.24	.53
3	1.00E-02	9.00E-02	.22	.55
4	1.00E-02	7.00E-02	.25	.54

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	3.70E+05	2.82E+06	9.33E+06	2.19E+07
2	3.70E+05	2.82E+06	9.33E+06	2.19E+07
3	3.70E+05	2.82E+06	9.34E+06	2.19E+07
4	3.70E+05	2.82E+06	9.34E+06	2.19E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	37.	35.	39.	44.
2	0.00E+00	40.	39.	41.
3	37.	31.	42.	40.
4	37.	40.	37.	41.

****** Results for ZTGEVC(B,R) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	3.00E-02	.18	.57	1.3
2	3.00E-02	.18	.57	1.3
3	2.00E-02	.18	.60	1.4
4	2.00E-02	.20	.59	1.4

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	8.84E+05	6.87E+06	2.30E+07	5.41E+07
2	8.84E+05	6.87E+06	2.30E+07	5.41E+07
3	8.84E+05	6.87E+06	2.30E+07	5.41E+07
4	8.84E+05	6.87E+06	2.30E+07	5.41E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	29.	38.	40.	42.
2	29.	38.	40.	41.
3	44.	38.	38.	39.

****** Results for ZTGEVC(R,A) ******
with LDA= 81

*** Time in seconds ***

N / Type	10	20	30	40
1	2.26E-04	8.96E-04	2.22E-03	4.62E-03
2	2.25E-04	8.82E-04	2.22E-03	4.00E-03
3	2.25E-04	7.69E-04	2.22E-03	4.00E-03
4	2.23E-04	9.09E-04	2.22E-03	4.29E-03

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	4.09E+03	2.71E+04	8.52E+04	1.94E+05
2	4.08E+03	2.71E+04	8.50E+04	1.94E+05
3	4.08E+03	2.71E+04	8.52E+04	1.94E+05
4	4.06E+03	2.71E+04	8.51E+04	1.94E+05

*** Speed in megaflops ***

N / Type	10	20	30	40
1	18.	30.	38.	42.
2	18.	31.	38.	49.
3	18.	35.	38.	49.
4	18.	30.	38.	45.

****** Results for ZTGEVC(R,B) ******
with LDA= 81

*** Time in seconds ***

N / Type	10	20	30	40
1	3.66E-04	1.62E-03	4.29E-03	1.00E-02
2	3.66E-04	1.67E-03	4.29E-03	1.00E-02
3	3.64E-04	1.62E-03	4.29E-03	1.00E-02
4	3.64E-04	1.62E-03	4.29E-03	7.14E-03

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	8.62E+03	6.12E+04	1.98E+05	4.59E+05
2	8.62E+03	6.12E+04	1.98E+05	4.59E+05
3	8.62E+03	6.13E+04	1.98E+05	4.59E+05
4	8.60E+03	6.13E+04	1.98E+05	4.59E+05

*** Speed in megaflops ***

N / Type	10	20	30	40
1	24.	38.	46.	46.
2	24.	37.	46.	46.
3	24.	38.	46.	46.

```
     4      44.       34.       39.       39.
```

```
****** Results for CQZHES(F)   ******
    with    LDA=  201

*** Time in seconds ***
       N      50        100       150       200
  Type
     1     1.00E-01  .81       3.5       9.0
     2     9.00E-02  .76       3.4       8.9
     3     9.00E-02  .73       3.3       8.9
     4     9.00E-02  .76       3.3       9.1

*** Number of floating-point operations ***
       N      50        100       150       200
  Type
     1     4.91E+06 3.96E+07 1.34E+08 3.19E+08
     2     4.91E+06 3.96E+07 1.34E+08 3.19E+08
     3     4.91E+06 3.96E+07 1.34E+08 3.19E+08
     4     4.91E+06 3.96E+07 1.34E+08 3.19E+08

*** Speed in megaflops ***
       N      50        100       150       200
  Type
     1      49.       49.       38.       35.
     2      55.       52.       40.       36.
     3      55.       54.       40.       36.
     4      55.       52.       40.       35.
```

```
****** Results for CQZHES(T)   ******
    with    LDA=  201

*** Time in seconds ***
       N      50        100       150       200
  Type
     1      .11       .98       4.3       11.
     2      .12       .94       4.2       11.
     3     1.00E-01  .98       4.2       11.
     4      .11       1.0       4.2       11.

*** Number of floating-point operations ***
       N      50        100       150       200
  Type
     1     6.08E+06 4.93E+07 1.67E+08 3.97E+08
     2     6.08E+06 4.93E+07 1.67E+08 3.97E+08
     3     6.08E+06 4.93E+07 1.67E+08 3.97E+08
     4     6.08E+06 4.93E+07 1.67E+08 3.97E+08

*** Speed in megaflops ***
       N      50        100       150       200
  Type
     1      55.       50.       39.       37.
```

```
     4      24.       38.       46.       64.
```

```
****** Results for CQZHES(F)   ******
    with    LDA=   81

*** Time in seconds ***
       N      10        20        30        40
  Type
     1     6.82E-04 3.33E-03 1.00E-02 2.00E-02
     2     6.06E-04 3.00E-03 1.00E-02 2.33E-02
     3     6.12E-04 3.16E-03 1.00E-02 2.33E-02
     4     6.06E-04 3.16E-03 1.00E-02 2.33E-02

*** Number of floating-point operations ***
       N      10        20        30        40
  Type
     1     3.64E+04 3.05E+05 1.05E+06 2.50E+06
     2     3.64E+04 3.05E+05 1.05E+06 2.50E+06
     3     3.64E+04 3.05E+05 1.05E+06 2.50E+06
     4     3.64E+04 3.05E+05 1.05E+06 2.50E+06

*** Speed in megaflops ***
       N      10        20        30        40
  Type
     1      53.       92.       1.05E+02 1.25E+02
     2      60.       1.02E+02 1.05E+02 1.07E+02
     3      59.       97.       1.05E+02 1.07E+02
     4      60.       97.       1.05E+02 1.07E+02
```

```
****** Results for CQZHES(T)   ******
    with    LDA=   81

*** Time in seconds ***
       N      10        20        30        40
  Type
     1     6.59E-04 3.75E-03 1.20E-02 3.00E-02
     2     6.52E-04 3.75E-03 1.20E-02 3.00E-02
     3     6.52E-04 4.00E-03 1.20E-02 3.00E-02
     4     6.59E-04 4.00E-03 1.20E-02 3.00E-02

*** Number of floating-point operations ***
       N      10        20        30        40
  Type
     1     4.36E+04 3.74E+05 1.29E+06 3.09E+06
     2     4.36E+04 3.74E+05 1.29E+06 3.09E+06
     3     4.36E+04 3.74E+05 1.29E+06 3.09E+06
     4     4.36E+04 3.74E+05 1.29E+06 3.09E+06

*** Speed in megaflops ***
       N      10        20        30        40
  Type
     1      66.       100.      1.08E+02 1.03E+02
```

2	51.	52.	40.	36.
3	61.	50.	40.	37.
4	55.	49.	40.	35.

****** Results for CQZVAL(F) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	.15	1.1	4.1	13.
2	.12	1.1	4.6	12.
3	.14	1.1	4.7	13.
4	1.00E-01	1.2	4.4	12.

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	9.14E+06	5.97E+07	1.91E+08	4.77E+08
2	9.19E+06	6.89E+07	2.18E+08	4.55E+08
3	9.54E+06	6.05E+07	2.13E+08	4.81E+08
4	8.94E+06	6.86E+07	2.08E+08	4.42E+08

*** Speed in megaflops ***

N / Type	50	100	150	200
1	61.	56.	47.	37.
2	77.	62.	48.	37.
3	68.	55.	46.	38.
4	89.	59.	47.	37.

****** Results for CQZVAL(T) ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	.28	2.3	11.	32.
2	.28	2.7	13.	30.
3	.29	2.3	12.	32.
4	.27	2.7	12.	29.

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	2.11E+07	1.68E+08	5.48E+08	1.31E+09
2	2.19E+07	1.72E+08	5.93E+08	1.32E+09
3	2.19E+07	1.64E+08	5.69E+08	1.32E+09
4	2.07E+07	1.74E+08	5.65E+08	1.26E+09

*** Speed in megaflops ***

N / Type	50	100	150	200
2	67.	100.	1.08E+02	1.03E+02
3	67.	93.	1.08E+02	1.03E+02
4	66.	93.	1.08E+02	1.03E+02

****** Results for CQZVAL(F) ******
with LDA= 81

*** Time in seconds ***

N / Type	10	20	30	40
1	2.07E-03	8.57E-03	2.33E-02	3.00E-02
2	1.58E-03	7.50E-03	2.00E-02	3.50E-02
3	1.62E-03	7.50E-03	2.00E-02	4.00E-02
4	1.82E-03	7.50E-03	2.00E-02	3.50E-02

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	1.15E+05	8.25E+05	2.42E+06	4.60E+06
2	9.88E+04	7.12E+05	2.33E+06	4.80E+06
3	1.03E+05	7.10E+05	2.09E+06	4.88E+06
4	1.13E+05	7.29E+05	2.21E+06	4.42E+06

*** Speed in megaflops ***

N / Type	10	20	30	40
1	56.	96.	1.04E+02	1.53E+02
2	63.	95.	1.16E+02	1.37E+02
3	63.	95.	1.04E+02	1.22E+02
4	62.	97.	1.11E+02	1.26E+02

****** Results for CQZVAL(T) ******
with LDA= 81

*** Time in seconds ***

N / Type	10	20	30	40
1	2.14E-03	1.20E-02	3.00E-02	6.00E-02
2	1.87E-03	1.00E-02	3.00E-02	7.00E-02
3	1.94E-03	1.00E-02	2.67E-02	7.00E-02
4	2.22E-03	1.00E-02	3.00E-02	6.00E-02

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	1.95E+05	1.67E+06	5.04E+06	1.10E+07
2	1.67E+05	1.49E+06	4.94E+06	1.09E+07
3	1.74E+05	1.40E+06	4.68E+06	1.14E+07
4	1.91E+05	1.47E+06	4.83E+06	1.01E+07

*** Speed in megaflops ***

N / Type	10	20	30	40

Type				
1	75.	73.	51.	41.
2	78.	63.	46.	43.
3	75.	71.	46.	41.
4	77.	64.	47.	43.

****** Results for CQZVEC ******
with LDA= 201

*** Time in seconds ***

N / Type	50	100	150	200
1	3.00E-02	.22	1.00	3.2
2	2.00E-02	.26	.99	2.9
3	4.00E-02	.24	1.0	3.0
4	2.00E-02	.25	.98	2.9

*** Number of floating-point operations ***

N / Type	50	100	150	200
1	8.93E+05	7.07E+06	2.38E+07	5.63E+07
2	8.93E+05	7.07E+06	2.38E+07	5.63E+07
3	8.93E+05	7.07E+06	2.38E+07	5.63E+07
4	8.93E+05	7.07E+06	2.38E+07	5.63E+07

*** Speed in megaflops ***

N / Type	50	100	150	200
1	30.	32.	24.	17.
2	45.	27.	24.	20.
3	22.	29.	23.	19.
4	45.	28.	24.	19.

End of timing run
Total time used = 1467.34 seconds

Type				
1	91.	1.39E+02	1.68E+02	1.83E+02
2	89.	1.49E+02	1.65E+02	1.56E+02
3	90.	1.40E+02	1.76E+02	1.63E+02
4	86.	1.47E+02	1.61E+02	1.69E+02

****** Results for CQZVEC ******
with LDA= 81

*** Time in seconds ***

N / Type	10	20	30	40
1	3.64E-04	1.71E-03	5.00E-03	1.00E-02
2	3.51E-04	1.76E-03	5.45E-03	1.00E-02
3	3.59E-04	1.71E-03	5.00E-03	1.00E-02
4	3.55E-04	1.82E-03	5.00E-03	8.33E-03

*** Number of floating-point operations ***

N / Type	10	20	30	40
1	7.68E+03	5.88E+04	1.96E+05	4.60E+05
2	7.68E+03	5.88E+04	1.96E+05	4.60E+05
3	7.68E+03	5.88E+04	1.96E+05	4.60E+05
4	7.68E+03	5.88E+04	1.96E+05	4.60E+05

*** Speed in megaflops ***

N / Type	10	20	30	40
1	21.	34.	39.	46.
2	22.	33.	36.	46.
3	21.	34.	39.	46.
4	22.	32.	39.	55.

End of timing run
Total time used = 19.48 seconds

```
Timing the Singular Value Decomposition routines
   ZGEBRD, ZBDSQR, and ZUNGBR

LAPACK VERSION 1.1, released March 31, 1993

The following parameter values will be used:
   Values of  M   :      50    50   100   100   100   200   200
   Values of  N   :      50   100    50   100   200   100   200
   Values of  NB  :       1
   Values of  LDA :     201

Minimum time a subroutine will be timed =       .00 seconds

ZTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   100, ITYPE=     2, IPAR=     1,              ISEED=( 2460, 3861, 1498,
321,
 ZTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 3872, 1352, 3912,
3145,
 ZTIM26: LINSVD    returned INFO=   100.
       M=   200, N=   100, ITYPE=     2, IPAR=     1,              ISEED=( 3997,  770, 1999,
3137,
 ZTIM26: LINSVD    returned INFO=   200.
       M=   200, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 3252, 3766, 3849,
3425,


****** Results for ZGEBRD    ******
    with LDA =  201, NB =    1

*** Time in seconds ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
 Type
    1       2.00E-02   9.00E-02   1.00E-01   .32        .69        .68        2.3
    2       4.00E-02   8.00E-02   1.00E-01   .28        .78        .71        2.2
    3       4.00E-02   7.00E-02   9.00E-02   .31        .75        .71        2.3
    4       4.00E-02   8.00E-02   8.00E-02   .32        .76        .70        2.2

*** Number of floating-point operations ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
 Type
    1       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07
    2       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07
    3       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07
    4       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07

*** Speed in megaflops ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
 Type
    1        68.        37.        34.        34.        39.        39.        38.
    2        34.        42.        34.        39.        34.        38.        39.
    3        34.        48.        37.        35.        36.        38.        38.
    4        34.        42.        42.        34.        35.        38.        40.
```

```
Timing the Singular Value Decomposition routines
   ZGEBRD, ZBDSQR, and ZUNGBR

LAPACK VERSION 2.0, released September 30, 1994

The following parameter values will be used:
   Values of  M   :      50    50   100   100   100   200   200
   Values of  N   :      50   100    50   100   200   100   200
   Values of  NB  :       1
   Values of  LDA :     201

Minimum time a subroutine will be timed =       .00 seconds

ZTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   100, ITYPE=     2, IPAR=     1.              ISEED=( 2460, 3861, 1498,
321,
 ZTIM26: LINSVD    returned INFO=   100.
       M=   100, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 3872, 1352, 3912,
3145,
 ZTIM26: LINSVD    returned INFO=   100.
       M=   200, N=   100, ITYPE=     2, IPAR=     1,              ISEED=( 3997,  770, 1999,
3137,
 ZTIM26: LINSVD    returned INFO=   200.
       M=   200, N=   200, ITYPE=     2, IPAR=     1,              ISEED=( 3252, 3766, 3849,
3425,


****** Results for ZGEBRD    ******
    with LDA =  201, NB =    1

*** Time in seconds ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
 Type
    1       4.00E-02   7.00E-02   5.00E-02   .17        .53        .52        1.7
    2       3.00E-02   6.00E-02   5.00E-02   .19        .51        .52        1.7
    3       3.00E-02   7.00E-02   6.00E-02   .17        .50        .51        1.7
    4       2.00E-02   7.00E-02   5.00E-02   .22        .51        .50        1.7

*** Number of floating-point operations ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
 Type
    1       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07
    2       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07
    3       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07
    4       1.37E+06   3.36E+06   3.36E+06   1.08E+07   2.68E+07   2.68E+07   8.58E+07

*** Speed in megaflops ***
      M,N (  50,  50)(  50, 100)( 100,  50)( 100, 100)( 100, 200)( 200, 100)( 200, 200)
 Type
    1        34.        48.        67.        63.        51.        51.        51.
    2        46.        56.        67.        57.        52.        51.        49.
    3        46.        48.        56.        63.        54.        52.        51.
    4        68.        48.        67.        49.        52.        54.        52.
```

****** Results for ZBDSQR ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.00E-02	1.00E-02	2.00E-02	7.00E-02	5.00E-02	6.00E-02	.25
2	1.00E-02	1.00E-02	0.00E+00	2.00E-02	2.00E-02	3.00E-02	.11
3	2.00E-02	2.00E-02	2.00E-02	9.00E-02	8.00E-02	9.00E-02	.31
4	2.00E-02	2.00E-02	2.00E-02	6.00E-02	8.00E-02	8.00E-02	.22

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	8.39E+04	8.63E+04	8.61E+04	3.34E+05	3.33E+05	3.31E+05	1.28E+06
2	2.57E+04	2.53E+04	2.59E+04	1.01E+05	1.01E+05	1.01E+05	3.99E+05
3	1.05E+05	1.15E+05	1.04E+05	4.27E+05	4.57E+05	4.25E+05	1.65E+06
4	8.67E+04	1.06E+05	1.02E+05	3.22E+05	4.20E+05	4.09E+05	1.27E+06

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	8.4	8.6	4.3	4.8	6.7	5.5	5.1
2	2.6	2.5	0.00E+00	5.1	5.0	3.4	3.6
3	5.2	5.7	5.2	4.7	5.7	4.7	5.3
4	4.3	5.3	5.1	5.4	5.3	5.1	5.8

****** Results for ZBDSQR(L) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	7.00E-02	7.00E-02	.14	.52	.51	.90	3.8
2	3.00E-02	3.00E-02	7.00E-02	.24	.25	.43	1.6
3	9.00E-02	7.00E-02	.17	.66	.75	1.2	4.9
4	7.00E-02	1.00E-01	.16	.52	.66	1.2	3.6

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	7.97E+05	8.32E+05	1.55E+06	6.13E+06	6.16E+06	1.18E+07	4.61E+07
2	3.54E+05	3.63E+05	6.83E+05	2.71E+06	2.76E+06	5.35E+06	2.12E+07
3	9.99E+05	1.10E+06	1.88E+06	7.83E+06	8.40E+06	1.52E+07	5.95E+07
4	8.23E+05	1.02E+06	1.84E+06	5.89E+06	7.75E+06	1.46E+07	4.55E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	11.	12.	11.	12.	12.	13.	12.
2	12.	12.	9.8	11.	11.	12.	13.
3	11.	16.	11.	12.	11.	13.	12.
4	12.	10.	11.	11.	12.	12.	13.

****** Results for ZBDSQR ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.00E-02	1.00E-02	0.00E+00	1.00E-02	2.00E-02	2.00E-02	6.00E-02
2	0.00E+00	0.00E+00	0.00E+00	1.00E-02	1.00E-02	1.00E-02	3.00E-02
3	1.00E-02	1.00E-02	0.00E+00	1.00E-02	2.00E-02	1.00E-02	9.00E-02
4	1.00E-02	0.00E+00	0.00E+00	1.00E-02	3.00E-02	2.00E-02	5.00E-02

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.01E+04	4.05E+04	4.10E+04	1.42E+05	1.43E+05	1.40E+05	5.11E+05
2	1.98E+04	1.98E+04	1.99E+04	7.07E+04	7.13E+04	7.05E+04	2.63E+05
3	8.91E+04	6.53E+04	7.09E+04	2.68E+05	2.53E+05	1.61E+05	1.05E+06
4	4.42E+04	4.99E+04	5.17E+04	1.47E+05	1.76E+05	1.78E+05	5.55E+05

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	4.0	4.0	0.00E+00	14.	7.1	7.0	8.5
2	0.00E+00	0.00E+00	0.00E+00	7.1	7.1	7.0	8.8
3	8.9	6.5	0.00E+00	27.	13.	16.	12.
4	4.4	0.00E+00	0.00E+00	15.	5.9	8.9	11.

****** Results for ZBDSQR(L) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	3.00E-02	3.00E-02	6.00E-02	.24	.24	.40	1.6
2	2.00E-02	2.00E-02	3.00E-02	1.00E-01	.12	.16	.76
3	3.00E-02	4.00E-02	7.00E-02	.31	.27	.48	2.2
4	3.00E-02	4.00E-02	7.00E-02	.21	.29	.52	1.5

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.52E+06	1.58E+06	3.02E+06	1.19E+07	1.20E+07	2.33E+07	9.11E+07
2	6.85E+05	7.02E+05	1.34E+06	5.34E+06	5.41E+06	1.06E+07	4.20E+07
3	1.96E+06	2.09E+06	3.66E+06	1.52E+07	1.54E+07	2.90E+07	1.24E+08
4	1.57E+06	1.95E+06	3.58E+06	1.15E+07	1.51E+07	2.88E+07	8.99E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	51.	53.	50.	50.	50.	58.	57.
2	34.	35.	45.	53.	45.	66.	55.
3	65.	52.	52.	49.	57.	60.	57.
4	52.	49.	51.	55.	52.	55.	59.

****** Results for ZBDSQR(R) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	7.00E-02	.12	5.00E-02	.53	1.2	.47	5.0
2	3.00E-02	5.00E-02	3.00E-02	.23	.64	.21	2.3
3	9.00E-02	.17	9.00E-02	.64	2.0	.63	6.8
4	7.00E-02	.17	8.00E-02	.53	1.7	.57	5.0

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	7.98E+05	1.55E+06	8.19E+05	6.13E+06	1.19E+07	6.06E+06	4.62E+07
2	3.56E+05	6.74E+05	3.56E+05	2.72E+06	5.30E+06	2.73E+06	2.12E+07
3	1.00E+06	2.06E+06	9.93E+05	7.84E+06	1.62E+07	7.80E+06	5.95E+07
4	8.25E+05	1.91E+06	9.71E+05	5.90E+06	1.50E+07	7.50E+06	4.56E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	11.	13.	16.	12.	9.6	13.	9.2
2	12.	13.	12.	12.	8.3	13.	9.2
3	11.	12.	11.	12.	8.2	12.	8.8
4	12.	11.	12.	11.	8.8	13.	9.0

****** Results for ZBDSQR(B) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	.11	.19	.19	.97	1.7	1.3	8.3
2	6.00E-02	8.00E-02	7.00E-02	.43	.89	.63	3.9
3	.15	.24	.24	1.2	2.6	1.8	11.
4	.13	.23	.22	.91	2.3	1.7	8.4

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.51E+06	2.30E+06	2.29E+06	1.19E+07	1.77E+07	1.75E+07	9.10E+07
2	6.84E+05	1.01E+06	1.01E+06	5.33E+06	7.96E+06	7.98E+06	4.19E+07
3	1.89E+06	3.04E+06	2.77E+06	1.52E+07	2.42E+07	2.25E+07	1.17E+08
4	1.56E+06	2.83E+06	2.71E+06	1.15E+07	2.23E+07	2.17E+07	8.98E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	14.	12.	12.	12.	11.	14.	11.
2	11.	13.	14.	12.	8.9	13.	11.

****** Results for ZBDSQR(R) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	3.00E-02	5.00E-02	4.00E-02	.24	.43	.23	1.6
2	1.00E-02	1.00E-02	1.00E-02	.11	.18	.11	.78
3	4.00E-02	6.00E-02	4.00E-02	.28	.55	.27	2.1
4	2.00E-02	6.00E-02	4.00E-02	.20	.48	.29	1.5

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	1.52E+06	3.02E+06	1.56E+06	1.19E+07	2.34E+07	1.18E+07	9.11E+07
2	6.85E+05	1.32E+06	6.86E+05	5.34E+06	1.05E+07	5.36E+06	4.20E+07
3	1.96E+06	4.00E+06	1.89E+06	1.52E+07	3.00E+07	1.47E+07	1.24E+08
4	1.57E+06	3.72E+06	1.84E+06	1.15E+07	2.95E+07	1.46E+07	8.99E+07

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	51.	60.	39.	50.	54.	51.	58.
2	68.	1.32E+02	69.	49.	58.	49.	54.
3	49.	67.	47.	54.	55.	54.	59.
4	78.	62.	46.	57.	62.	50.	60.

****** Results for ZBDSQR(B) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	5.00E-02	6.00E-02	8.00E-02	.46	.61	.59	3.0
2	4.00E-02	3.00E-02	4.00E-02	.21	.28	.26	1.4
3	6.00E-02	1.00E-01	1.00E-01	.55	.75	.74	4.0
4	6.00E-02	9.00E-02	1.00E-01	.39	.78	.71	2.9

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	2.94E+06	4.51E+06	4.49E+06	2.35E+07	3.51E+07	3.47E+07	1.81E+08
2	1.34E+06	1.99E+06	2.00E+06	1.06E+07	1.58E+07	1.59E+07	8.35E+07
3	3.81E+06	5.97E+06	5.44E+06	3.00E+07	4.43E+07	4.32E+07	2.46E+08
4	3.04E+06	5.56E+06	5.32E+06	2.26E+07	4.42E+07	4.30E+07	1.78E+08

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	59.	75.	56.	51.	57.	59.	60.
2	34.	66.	50.	50.	56.	61.	58.

3	13.	13.	12.	12.	9.4	13.	11.
4	12.	12.	12.	13.	9.8	13.	11.

****** Results for ZBDSQR(V) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	7.00E-02	9.00E-02	7.00E-02	.49	.49	.44	4.9
2	3.00E-02	2.00E-02	3.00E-02	.21	.21	.19	2.3
3	7.00E-02	9.00E-02	9.00E-02	.61	.65	.64	6.6
4	7.00E-02	8.00E-02	8.00E-02	.46	.60	.59	5.0

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	7.97E+05	8.32E+05	8.18E+05	6.13E+06	6.16E+06	6.06E+06	4.61E+07
2	3.54E+05	3.63E+05	3.54E+05	2.71E+06	2.76E+06	2.73E+06	2.12E+07
3	9.99E+05	1.10E+06	9.92E+05	7.83E+06	8.40E+06	7.79E+06	5.95E+07
4	8.23E+05	1.02E+06	9.69E+05	5.89E+06	7.75E+06	7.50E+06	4.55E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	11.	9.2	12.	13.	13.	14.	9.4
2	12.	18.	12.	13.	13.	14.	9.4
3	14.	12.	11.	13.	13.	12.	9.0
4	12.	13.	12.	13.	13.	13.	9.1

****** Results for LAPSVD ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	1.00E-01	.12	.39	.74	.74	2.5
2	5.00E-02	9.00E-02	1.00E-01	.30	.80	.74	2.3
3	6.00E-02	9.00E-02	.11	.40	.83	.80	2.6
4	6.00E-02	1.00E-01	1.00E-01	.38	.84	.78	2.4

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.45E+06	3.45E+06	3.45E+06	1.11E+07	2.71E+07	2.71E+07	8.71E+07
2	1.39E+06	3.39E+06	3.39E+06	1.09E+07	2.69E+07	2.69E+07	8.62E+07
3	1.47E+06	3.48E+06	3.46E+06	1.12E+07	2.72E+07	2.72E+07	8.75E+07
4	1.45E+06	3.47E+06	3.46E+06	1.11E+07	2.72E+07	2.72E+07	8.71E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							

3	64.	60.	54.	55.	60.	58.	61.
4	51.	62.	53.	58.	57.	61.	62.

****** Results for ZBDSQR(V) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.00E-02	3.00E-02	3.00E-02	.22	.23	.22	1.6
2	1.00E-02	2.00E-02	1.00E-02	.13	.11	.12	.80
3	4.00E-02	3.00E-02	3.00E-02	.28	.31	.30	2.1
4	3.00E-02	4.00E-02	3.00E-02	.21	.28	.27	1.9

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.52E+06	1.58E+06	1.56E+06	1.19E+07	1.20E+07	1.18E+07	9.11E+07
2	6.85E+05	7.02E+05	6.86E+05	5.34E+06	5.41E+06	5.36E+06	4.20E+07
3	1.96E+06	2.09E+06	1.89E+06	1.52E+07	1.54E+07	1.47E+07	1.24E+08
4	1.57E+06	1.95E+06	1.84E+06	1.15E+07	1.51E+07	1.46E+07	8.99E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	51.	53.	52.	54.	52.	54.	56.
2	68.	35.	69.	41.	49.	45.	52.
3	49.	70.	63.	54.	50.	49.	58.
4	52.	49.	61.	55.	54.	54.	60.

****** Results for LAPSVD ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	5.00E-02	8.00E-02	5.00E-02	.18	.55	.54	1.7
2	3.00E-02	6.00E-02	5.00E-02	.20	.52	.53	1.8
3	4.00E-02	8.00E-02	6.00E-02	.18	.52	.52	1.8
4	3.00E-02	7.00E-02	5.00E-02	.23	.54	.52	1.7

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.41E+06	3.40E+06	3.40E+06	1.09E+07	2.69E+07	2.69E+07	8.63E+07
2	1.39E+06	3.38E+06	3.38E+06	1.09E+07	2.68E+07	2.68E+07	8.61E+07
3	1.45E+06	3.43E+06	3.43E+06	1.11E+07	2.70E+07	2.69E+07	8.69E+07
4	1.41E+06	3.41E+06	3.41E+06	1.09E+07	2.69E+07	2.69E+07	8.64E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							

1	48.	34.	29.	29.	37.	37.	34.
2	28.	38.	34.	36.	34.	36.	37.
3	25.	39.	31.	28.	33.	34.	34.
4	24.	35.	35.	29.	32.	35.	36.

****** Results for LAPSVD(l) ******
with LDA = 201, NB = 1

*** Time in seconds ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	1.00E-01	.17	.29	.99	1.3	1.9	7.2
2	9.00E-02	.12	.21	.66	1.2	1.5	4.9
3	.15	.15	.30	1.1	1.6	2.2	8.3
4	.13	.20	.28	.98	1.6	2.2	6.9

*** Number of floating-point operations ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	2.84E+06	4.87E+06	6.59E+06	2.23E+07	3.83E+07	5.19E+07	1.75E+08
2	2.40E+06	4.40E+06	5.72E+06	1.89E+07	3.49E+07	4.55E+07	1.50E+08
3	3.05E+06	5.14E+06	6.92E+06	2.40E+07	4.06E+07	5.53E+07	1.88E+08
4	2.87E+06	5.06E+06	6.87E+06	2.21E+07	3.99E+07	5.47E+07	1.74E+08

*** Speed in megaflops ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	28.	29.	23.	23.	29.	27.	24.
2	27.	37.	27.	29.	30.	31.	30.
3	20.	34.	23.	21.	25.	25.	23.
4	22.	25.	25.	23.	26.	24.	25.

****** Results for LAPSVD(L) ******
with LDA = 201, NB = 1

*** Time in seconds ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	.11	.17	.35	.99	1.3	2.5	7.2
2	8.00E-02	.13	.31	.68	1.2	2.1	4.9
3	.14	.16	.40	1.1	1.6	2.8	8.4
4	.13	.20	.37	.99	1.6	2.9	6.9

*** Number of floating-point operations ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	2.84E+06	4.87E+06	9.62E+06	2.23E+07	3.83E+07	7.61E+07	1.75E+08
2	2.40E+06	4.40E+06	8.75E+06	1.89E+07	3.49E+07	6.96E+07	1.50E+08
3	3.05E+06	5.14E+06	9.95E+06	2.40E+07	4.06E+07	7.94E+07	1.88E+08
4	2.87E+06	5.06E+06	9.91E+06	2.21E+07	3.99E+07	7.89E+07	1.74E+08

*** Speed in megaflops ***

1	28.	43.	68.	61.	49.	50.	49.
2	46.	56.	68.	54.	52.	51.	49.
3	36.	43.	57.	61.	52.	52.	49.
4	47.	49.	68.	48.	50.	52.	51.

****** Results for LAPSVD(l) ******
with LDA = 201, NB = 1

*** Time in seconds ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	8.00E-02	.12	.13	.51	.86	1.2	4.2
2	6.00E-02	9.00E-02	.11	.40	.74	.93	3.4
3	7.00E-02	.13	.16	.56	.86	1.2	4.7
4	6.00E-02	.12	.15	.53	.90	1.3	4.0

*** Number of floating-point operations ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	3.56E+06	5.63E+06	8.06E+06	2.81E+07	4.42E+07	6.34E+07	2.20E+08
2	2.73E+06	4.74E+06	6.38E+06	2.15E+07	3.76E+07	5.08E+07	1.71E+08
3	4.01E+06	6.13E+06	8.70E+06	3.14E+07	4.75E+07	6.91E+07	2.53E+08
4	3.61E+06	5.99E+06	8.62E+06	2.77E+07	4.73E+07	6.89E+07	2.19E+08

*** Speed in megaflops ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	45.	47.	62.	55.	51.	54.	52.
2	46.	53.	58.	54.	51.	55.	51.
3	57.	47.	54.	56.	55.	55.	54.
4	60.	50.	57.	52.	53.	55.	54.

****** Results for LAPSVD(L) ******
with LDA = 201, NB = 1

*** Time in seconds ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	9.00E-02	.11	.20	.52	.88	1.6	4.2
2	6.00E-02	9.00E-02	.18	.37	.72	1.4	3.4
3	7.00E-02	.12	.22	.57	.85	1.7	4.7
4	6.00E-02	.12	.21	.53	.89	1.8	4.0

*** Number of floating-point operations ***

Type \ M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
1	3.56E+06	5.63E+06	1.11E+07	2.81E+07	4.42E+07	8.75E+07	2.20E+08
2	2.73E+06	4.74E+06	9.42E+06	2.15E+07	3.76E+07	7.49E+07	1.71E+08
3	4.01E+06	6.13E+06	1.17E+07	3.14E+07	4.75E+07	9.33E+07	2.53E+08
4	3.61E+06	5.99E+06	1.17E+07	2.77E+07	4.73E+07	9.31E+07	2.19E+08

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	26.	29.	27.	23.	28.	31.	24.
2	30.	34.	28.	28.	30.	33.	30.
3	22.	32.	25.	21.	25.	28.	23.
4	22.	25.	27.	22.	26.	27.	25.

****** Results for LAPSVD(R) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	.11	.34	.16	.99	2.9	1.3	8.4
2	9.00E-02	.25	.15	.65	2.4	1.1	5.6
3	.15	.39	.19	1.1	3.7	1.5	10.
4	.13	.37	.18	.99	3.4	1.4	8.3

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	2.85E+06	9.62E+06	4.86E+06	2.23E+07	7.62E+07	3.82E+07	1.75E+08
2	2.40E+06	8.75E+06	4.40E+06	1.89E+07	6.96E+07	3.49E+07	1.50E+08
3	3.05E+06	1.01E+07	5.04E+06	2.40E+07	8.05E+07	4.00E+07	1.88E+08
4	2.87E+06	9.98E+06	5.01E+06	2.21E+07	7.93E+07	3.97E+07	1.74E+08

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	26.	28.	30.	23.	27.	29.	21.
2	27.	35.	29.	29.	29.	33.	27.
3	20.	26.	27.	22.	22.	27.	19.
4	22.	27.	28.	22.	23.	28.	21.

****** Results for LAPSVD(B) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	.16	.43	.35	1.6	3.5	2.4	13.
2	.14	[illegible]	.23	1.0	2.8	1.8	8.3
3	[illegible]	[illegible]	.38	1.8	4.4	3.0	15.
4	.19	.44	.36	1.5	4.2	2.9	13.

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	4.24E+06	1.11E+07	8.00E+06	3.35E+07	8.74E+07	6.31E+07	2.63E+08
2	3.41E+06	9.76E+06	6.73E+06	2.69E+07	7.76E+07	5.35E+07	2.14E+08
3	4.62E+06	1.18E+07	8.49E+06	3.68E+07	9.39E+07	6.81E+07	2.89E+08
4	4.29E+06	1.16E+07	8.43E+06	3.30E+07	9.20E+07	6.72E+07	2.61E+08

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	40.	51.	55.	54.	50.	53.	53.
2	46.	53.	52.	58.	52.	53.	51.
3	57.	51.	53.	55.	56.	55.	53.
4	60.	50.	55.	52.	53.	51.	54.

****** Results for LAPSVD(R) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	8.00E-02	.19	1.00E-01	.49	1.7	.85	4.1
2	5.00E-02	.16	7.00E-02	.41	1.4	.73	3.3
3	8.00E-02	.22	.11	.55	1.7	.85	4.6
4	4.00E-02	.22	1.00E-01	.47	1.6	.89	3.9

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	3.56E+06	1.11E+07	5.60E+06	2.81E+07	8.77E+07	4.40E+07	2.20E+08
2	2.73E+06	9.39E+06	4.73E+06	2.15E+07	7.48E+07	3.75E+07	1.71E+08
3	4.01E+06	1.21E+07	5.93E+06	3.14E+07	9.43E+07	4.69E+07	2.53E+08
4	3.61E+06	1.18E+07	5.89E+06	2.77E+07	9.38E+07	4.68E+07	2.19E+08

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	45.	58.	56.	57.	53.	52.	53.
2	55.	59.	68.	52.	53.	51.	51.
3	50.	55.	54.	57.	54.	55.	55.
4	90.	54.	59.	59.	57.	53.	55.

****** Results for LAPSVD(B) ******
with LDA = 201, NB = 1

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	.11	.23	.16	.83	1.9	1.5	6.4
2	9.00E-02	.19	.12	.60	1.6	1.1	4.8
3	9.00E-02	.25	.20	.90	2.0	1.6	7.4
4	1.00E-01	.25	.20	.80	2.1	1.6	6.1

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	5.67E+06	1.33E+07	1.02E+07	4.51E+07	1.05E+08	8.03E+07	3.52E+08
2	4.07E+06	1.07E+07	7.72E+06	3.21E+07	8.55E+07	6.14E+07	2.55E+08
3	6.54E+06	1.47E+07	1.12E+07	5.16E+07	1.15E+08	8.88E+07	4.18E+08
4	5.77E+06	1.43E+07	1.10E+07	4.42E+07	1.14E+08	8.85E+07	3.50E+08

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	26.	26.	23.	21.	25.	26.	20.
2	24.	33.	29.	27.	28.	29.	26.
3	20.	27.	22.	20.	21.	23.	19.
4	23.	26.	23.	22.	22.	23.	20.

****** Results for LINSVD ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	7.00E-02	.15	.13	.46	.93	.75	2.7
2	6.00E-02	.14	.12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	8.00E-02	.18	.12	.48	.90	.83	2.9
4	8.00E-02	.15	.15	.41	.94	.92	2.8

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.57E+06	3.65E+06	3.56E+06	1.16E+07	2.79E+07	2.75E+07	8.89E+07
2	1.51E+06	3.58E+06	3.49E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.57E+06	3.66E+06	3.56E+06	1.16E+07	2.79E+07	2.75E+07	8.90E+07
4	1.58E+06	3.68E+06	3.58E+06	1.16E+07	2.80E+07	2.76E+07	8.89E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	22.	24.	27.	25.	30.	37.	33.
2	25.	26.	29.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	20.	20.	30.	24.	31.	33.	31.
4	20.	25.	24.	28.	30.	30.	32.

****** Results for LINSVD(1) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	.14	.19	.26	1.0	1.5	1.9	6.9
2	.11	.21	.24	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	.15	.26	.30	1.1	1.4	2.1	7.5
4	.14	.23	.30	.95	1.5	2.2	6.8

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.76E+06	5.83E+06	8.29E+06	2.88E+07	4.51E+07	6.43E+07	2.24E+08
2	3.22E+06	5.29E+06	7.19E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	52.	58.	64.	54.	54.	55.	55.
2	45.	57.	64.	54.	53.	53.	53.
3	73.	59.	56.	57.	57.	56.	57.
4	58.	57.	55.	55.	54.	56.	57.

****** Results for LINSVD ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	5.00E-02	1.00E-01	9.00E-02	.31	.67	.61	2.1
2	4.00E-02	1.00E-01	8.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	5.00E-02	.11	9.00E-02	.30	.66	.63	2.1
4	5.00E-02	.11	9.00E-02	.25	.67	.63	2.0

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	1.57E+06	3.65E+06	3.56E+06	1.16E+07	2.79E+07	2.75E+07	8.89E+07
2	1.51E+06	3.58E+06	3.49E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.57E+06	3.66E+06	3.56E+06	1.16E+07	2.79E+07	2.75E+07	8.91E+07
4	1.58E+06	3.68E+06	3.58E+06	1.16E+07	2.80E+07	2.76E+07	8.89E+07

*** Speed in megaflops ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	31.	36.	40.	37.	42.	45.	42.
2	38.	36.	44.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	31.	33.	40.	39.	42.	44.	43.
4	32.	33.	40.	46.	42.	44.	44.

****** Results for LINSVD(1) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	8.00E-02	.14	.15	.58	.95	1.2	4.3
2	9.00E-02	.13	.14	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.00E-01	.12	.18	.63	1.00	1.3	4.6
4	9.00E-02	.14	.18	.60	1.0	1.3	4.1

*** Number of floating-point operations ***

M,N	50, 50)	50, 100)	100, 50)	100, 100)	100, 200)	200, 100)	200, 200)
Type							
1	3.76E+06	5.83E+06	8.29E+06	2.88E+07	4.51E+07	6.43E+07	2.24E+08
2	3.21E+06	5.31E+06	7.19E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00

3	3.72E+06	5.91E+06	8.24E+06	2.89E+07	4.52E+07	6.46E+07	2.27E+08
4	3.80E+06	6.07E+06	8.66E+06	2.86E+07	4.65E+07	6.75E+07	2.22E+08

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	27.	31.	32.	28.	29.	33.	32.
2	29.	25.	30.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	25.	23.	27.	26.	32.	31.	30.
4	27.	26.	29.	30.	31.	30.	33.

****** Results for LINSVD(L) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	.16	.20	.35	.94	1.5	2.6	6.9
2	.11	.18	.32	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	.14	.22	.37	1.1	1.5	2.7	7.5
4	.14	.23	.39	.95	1.4	2.8	6.8

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	3.76E+06	5.83E+06	1.13E+07	2.88E+07	4.51E+07	8.85E+07	2.24E+08
2	3.22E+06	5.29E+06	1.02E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	3.72E+06	5.91E+06	1.13E+07	2.89E+07	4.52E+07	8.87E+07	2.27E+08
4	3.80E+06	6.07E+06	1.17E+07	2.86E+07	4.65E+07	9.16E+07	2.22E+08

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	23.	29.	32.	31.	31.	34.	32.
2	29.	29.	32.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	27.	27.	31.	27.	30.	33.	30.
4	27.	26.	30.	30.	33.	33.	33.

****** Results for LINSVD(R) ******
with LDA = 201

*** Time in seconds ***

M,N			100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	.15	.37	.19	.98	2.6	1.4	7.2
2	.13	.34	.18	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	.17	.39	.21	1.1	2.8	1.4	7.6
4	.13	.41	.22	.93	2.7	1.5	6.9

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							

3	3.69E+06	5.93E+06	8.24E+06	2.91E+07	4.54E+07	6.47E+07	2.28E+08
4	3.80E+06	6.07E+06	8.66E+06	2.86E+07	4.65E+07	6.75E+07	2.22E+08

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	47.	42.	55.	50.	47.	52.	52.
2	36.	41.	51.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	37.	49.	46.	46.	45.	51.	49.
4	42.	43.	48.	48.	45.	50.	54.

****** Results for LINSVD(L) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	9.00E-02	.13	.24	.61	.93	1.7	4.3
2	6.00E-02	.12	.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	9.00E-02	.12	.24	.65	.98	1.8	4.7
4	8.00E-02	.15	.24	.57	.98	1.8	4.1

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	3.76E+06	5.83E+06	1.13E+07	2.88E+07	4.51E+07	8.85E+07	2.24E+08
2	3.21E+06	5.31E+06	1.02E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	3.69E+06	5.93E+06	1.13E+07	2.91E+07	4.54E+07	8.89E+07	2.28E+08
4	3.80E+06	6.07E+06	1.17E+07	2.86E+07	4.65E+07	9.16E+07	2.22E+08

*** Speed in megaflops ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	42.	45.	47.	47.	48.	51.	52.
2	54.	44.	49.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	41.	49.	47.	45.	46.	49.	49.
4	47.	40.	49.	50.	47.	51.	53.

****** Results for LINSVD(R) ******
with LDA = 201

*** Time in seconds ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							
1	7.00E-02	.25	.13	.61	1.8	.91	4.2
2	8.00E-02	.21	.11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	9.00E-02	.24	.12	.62	1.9	.95	4.7
4	8.00E-02	.25	.12	.60	1.7	.99	4.2

*** Number of floating-point operations ***

M,N	50, 50	50, 100	100, 50	100, 100	100, 200	200, 100	200, 200
Type							

1	3.73E+06	1.13E+07	5.74E+06	2.87E+07	8.89E+07	4.45E+07	2.24E+08
2	3.19E+06	1.03E+07	5.16E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	3.70E+06	1.15E+07	5.72E+06	2.88E+07	8.93E+07	4.47E+07	2.27E+08
4	3.77E+06	1.18E+07	5.95E+06	2.85E+07	9.17E+07	4.62E+07	2.21E+08

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	25.	31.	30.	29.	34.	33.	31.
2	25.	30.	29.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	22.	30.	27.	27.	32.	31.	30.
4	29.	29.	27.	31.	34.	31.	32.

****** Results for LINSVD(B) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	.22	.45	.35	1.5	3.1	2.6	11.
2	.18	.38	.29	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	.21	.48	.38	1.7	3.5	2.7	12.
4	.23	.46	.40	1.4	3.3	2.7	11.

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	5.91E+06	1.35E+07	1.05E+07	4.59E+07	1.06E+08	8.14E+07	3.59E+08
2	4.90E+06	1.20E+07	8.86E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	5.85E+06	1.38E+07	1.04E+07	4.60E+07	1.07E+08	8.17E+07	3.65E+08
4	5.99E+06	1.42E+07	1.10E+07	4.55E+07	1.10E+08	8.60E+07	3.55E+08

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	27.	30.	30.	30.	34.	32.	33.
2	27.	32.	31.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	28.	29.	27.	27.	31.	30.	30.
4	26.	31.	28.	31.	33.	32.	33.

End of timing run
Total time used = 407.22 seconds

1	3.73E+06	1.13E+07	5.74E+06	2.87E+07	8.89E+07	4.45E+07	2.24E+08
2	3.18E+06	1.04E+07	5.16E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	3.67E+06	1.16E+07	5.72E+06	2.90E+07	8.96E+07	4.48E+07	2.28E+08
4	3.77E+06	1.18E+07	5.95E+06	2.85E+07	9.17E+07	4.62E+07	2.21E+08

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	53.	45.	44.	47.	49.	49.	53.
2	40.	49.	47.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	41.	48.	48.	47.	47.	47.	48.
4	47.	47.	50.	47.	52.	47.	53.

****** Results for LINSVD(B) ******
with LDA = 201

*** Time in seconds ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	.11	.26	.21	.88	2.1	1.5	6.4
2	.11	.24	.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	.12	.29	.21	.94	2.2	1.6	7.2
4	.11	.31	.22	.88	2.1	1.7	6.3

*** Number of floating-point operations ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100, 200)	(200, 100)	(200, 200)
Type							
1	5.91E+06	1.35E+07	1.05E+07	4.59E+07	1.06E+08	8.14E+07	3.59E+08
2	4.89E+06	1.21E+07	8.86E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	5.80E+06	1.38E+07	1.04E+07	4.64E+07	1.07E+08	8.19E+07	3.66E+08
4	5.99E+06	1.42E+07	1.10E+07	4.55E+07	1.10E+08	8.60E+07	3.55E+08

*** Speed in megaflops ***

M,N	(50, 50)	(50, 100)	(100, 50)	(100, 100)	(100. 200)	(200, 100)	(200, 200)
Type							
1	54.	52.	50.	52.	50.	54.	56.
2	44.	50.	52.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	48.	48.	50.	49.	49.	50.	51.
4	54.	46.	50.	52.	51.	52.	56.

End of timing run
Total time used = 230.66 seconds

Appendix 3. Basic Linear Algebra Subprograms (BLAS) timing data.

The data refer to the BLAS library that IBM supplies with the operating system.
The timing results refer to the Level 2 and 3 BLAS.
The Fortran ETIME routine was used in timing routines.
In the left column we report the data of SP1.
In the right column we report the data of SP2.

LAPACK VERSION 1.1, released March 31, 1993

BLAS timing, DOUBLE PRECISION data, K small

The following parameter values will be used:

M:	50	100	200	300	400	500
N:	50	100	200	300	400	500
K:	2	16	32	48	64	
INCX:	1					
LDA:	513					

The minimum time a subroutine will be timed = .000 seconds

>>>>> Timing data <<<<<

*** Speed of DGEMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DGEMV with TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	.0	5.0
100	.0	.0	.0	.0	.0	.0
200	.0	.0	8.0	12.0	.0	20.0
300	.0	.0	.0	.0	.0	30.0
400	.0	.0	.0	.0	32.0	40.0
500	5.1	10.1	.0	30.1	20.0	50.1

DGEMV with TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	.0	.0
100	.0	.0	.0	.0	.0	10.0
200	.0	.0	.0	12.0	16.0	20.0
300	.0	.0	.0	18.0	12.0	15.0
400	.0	.0	16.0	12.0	10.7	20.0
500	.0	10.1	20.1	15.0	20.0	16.7

*** Speed of DGBMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DGBMV with TRANS = 'N', M = N and KL = KU = K

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0

LAPACK VERSION 2.0, released September 30, 1994

BLAS timing, DOUBLE PRECISION data, K small

The following parameter values will be used:

M:	50	100	200	300	400	500
N:	50	100	200	300	400	500
K:	2	16	32	48	64	
INCX:	1					
LDA:	513					

The minimum time a subroutine will be timed = .000 seconds

>>>>> Timing data <<<<<

*** Speed of DGEMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DGEMV with TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	.0	.0
100	.0	.0	.0	.0	8.0	10.0
200	.0	.0	.0	12.0	.0	20.0
300	.0	.0	.0	18.0	24.0	30.0
400	.0	.0	.0	24.0	.0	40.0
500	.0	10.1	.0	30.1	20.0	50.1

DGEMV with TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	.0	.0
100	.0	.0	.0	.0	.0	.0
200	.0	.0	.0	.0	.0	.0
300	.0	.0	.0	.0	24.0	30.0
400	.0	.0	.0	.0	32.0	40.0
500	5.1	.0	20.1	30.1	.0	50.1

*** Speed of DGBMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DGBMV with TRANS = 'N', M = N and KL = KU = K

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.6
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	5.1	.0
48	.0	.0	.0	.0	7.4	.0

64	.0	.0	.0	.0	.0	12.2

DGBMV with TRANS = 'T', M = N and KL = KU = K

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	3.7	.0	.0
48	.5	.0	.0	.0	.0	.0
64	.0	.0	.0	.0	.0	.0

*** Speed of DSYMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DSYMV with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	18.0	.0	25.0

DSYMV with UPLO = 'L'

N	50	100	200	300	400	500
	.0	.0	.0	18.0	.0	50.1

*** Speed of DSBMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DSBMV with UPLO = 'U'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	5.0	.0
48	.0	.0	.0	.0	7.3	.0
64	.0	.0	.0	.0	.0	12.1

DSBMV with UPLO = 'L'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	7.3	9.3
64	.0	.0	.0	.0	9.5	12.1

64	.0	.0	.0	7.0	9.6	12.2

DGBMV with TRANS = 'T', M = N and KL = KU = K

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	5.1	.0
48	.0	.0	.0	.0	.0	9.3
64	.0	.0	.0	.0	.0	.0

*** Speed of DSYMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DSYMV with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.0	50.1

DSYMV with UPLO = 'L'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.0	50.1

*** Speed of DSBMV in megaflops ***
with LDA = 513 and INCX = INCY = 1

DSBMV with UPLO = 'U'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0
64	.0	.0	.0	.0	.0	.0

DSBMV with UPLO = 'L'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0
64	.5	.0	.0	.0	.0	.0

*** Speed of DSPMV in megaflops ***
with INCX = INCY = 1

DSPMV with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	18.0	32.0	50.1

DSPMV with UPLO = 'L'

N	50	100	200	300	400	500
	.0	.0	.0	18.0	32.0	50.1

*** Speed of DTRMV in megaflops ***
with LDA = 513 and INCX = 1

DTRMV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	.0	25.0

DTRMV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	4.5	.0	.0

DTRMV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	16.0	25.0

DTRMV with UPLO = 'L', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	4.0	9.0	16.0	12.5

*** Speed of DTBMV in megaflops ***
with LDA = 513 and INCX = 1

DTBMV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
K						
2	.0	.0	.0	.0	.0	.0

*** Speed of DSPMV in megaflops ***
with INCX = INCY = 1

DSPMV with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.0	50.1

DSPMV with UPLO = 'L'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	50.1

*** Speed of DTRMV in megaflops ***
with LDA = 513 and INCX = 1

DTRMV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	1.0	.0	9.0	16.0	25.0

DTRMV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

DTRMV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

DTRMV with UPLO = 'L', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	16.0	25.0

*** Speed of DTBMV in megaflops ***
with LDA = 513 and INCX = 1

DTBMV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
K						
2	.0	.0	.0	.0	.0	.0

16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	2.5	.0
48	.0	.0	.0	.0	3.6	.0
64	.0	.0	.0	.0	.0	6.0

DTBMV with UPLO = 'U', TRANS = 'T'

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0
64	.0	.0	.0	.0	.0	6.0

DTBMV with UPLO = 'L', TRANS = 'N'

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	1.0	.0	.0
32	.0	.0	.0	.0	2.5	.0
48	.0	.0	.0	.0	3.6	.0
64	.0	.0	.0	.0	.0	6.0

DTBMV with UPLO = 'L', TRANS = 'T'

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.2	.0
16	.0	.0	.0	1.0	.0	.0
32	.0	.5	.0	.0	2.5	.0
48	.0	.0	.0	.0	.0	.0
64	.0	.0	.0	.0	.0	.0

*** Speed of DTPMV in megaflops ***
with INCX = 1

DTPMV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	.0	25.0

DTPMV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	.0	.0

16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	2.7	.0	.0
64	.0	.0	.0	.0	.0	.0

DTBMV with UPLO = 'U', TRANS = 'T'

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0
64	.0	.0	.0	3.5	.0	6.0

DTBMV with UPLO = 'L', TRANS = 'N'

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	1.8	.0	.0
48	.0	.0	.0	.0	.0	4.6
64	.0	.0	.0	.0	.0	.0

DTBMV with UPLO = 'L', TRANS = 'T'

K \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	4.6
64	.0	.0	.0	.0	.0	.0

*** Speed of DTPMV in megaflops ***
with INCX = 1

DTPMV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

DTPMV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	.0

DTPMV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

DTPMV with UPLO = 'L', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

*** Speed of DTRSV in megaflops ***
with LDA = 513 and INCX = 1

DTRSV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	16.0	25.0

DTRSV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	.0	25.0

DTRSV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	4.0	9.0	16.0	12.5

DTRSV with UPLO = 'L', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

*** Speed of DTBSV in megaflops ***
with LDA = 513 and INCX = 1

DTBSV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
K						
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	4.6

DTPMV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	16.0	25.0

DTPMV with UPLO = 'L', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

*** Speed of DTRSV in megaflops ***
with LDA = 513 and INCX = 1

DTRSV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	4.0	.0	16.0	.0

DTRSV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	16.0	.0

DTRSV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	25.0

DTRSV with UPLO = 'L', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	16.0	.0

*** Speed of DTBSV in megaflops ***
with LDA = 513 and INCX = 1

DTBSV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
K						
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0

64	.0	.0	.0	3.5	.0	.0

DTBSV with UPLO = 'U', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	3.6	.0
64	.0	.0	.0	.0	.0	.0

DTBSV with UPLO = 'L', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.5	.0	.0	2.5	.0
48	.0	.0	.0	.0	3.6	.0
64	.0	.0	.0	3.5	.0	.0

DTBSV with UPLO = 'L', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	1.6
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	3.6	.0
64	.0	.0	.0	.0	.0	.0

*** Speed of DTPSV in megaflops ***
with INCX = 1

DTPSV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	.0	16.0	25.0

DTPSV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	.0	16.0	25.0

DTPSV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500

64	.0	.0	.0	.0	.0	.0

DTBSV with UPLO = 'U', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	4.6
64	.0	.0	2.2	.0	.0	.0

DTBSV with UPLO = 'L', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0
64	.0	.0	.0	.0	.0	.0

DTBSV with UPLO = 'L', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	1.8	.0	.0
48	.0	.0	.0	.0	.0	4.6
64	.0	.0	.0	.0	4.7	.0

*** Speed of DTPSV in megaflops ***
with INCX = 1

DTPSV with UPLO = 'U', TRANS = 'N'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	.0	25.0

DTPSV with UPLO = 'U', TRANS = 'T'

N	50	100	200	300	400	500
	.0	.0	.0	9.0	16.0	25.0

DTPSV with UPLO = 'L', TRANS = 'N'

N	50	100	200	300	400	500

```
            .0      .0      .0      .0      .0     25.0

DTPSV  with UPLO = 'L', TRANS = 'T'

       N    50     100     200     300     400     500

            .0      .0      .0      .0      .0     25.0


*** Speed of DGER   in megaflops ***
    with LDA =   513 and INCX = INCY =     1

DGER

       N    50     100     200     300     400     500
     M
    50      .0      .0      .0      .0      .0      .0
   100      .0      .0      .0      .0     8.0      .0
   200      .0      .0     8.0    12.0    16.0    20.0
   300      .0      .0      .0    18.0    24.0    30.0
   400      .0     8.0      .0    24.0    16.0    20.0


*** Speed of DSYR   in megaflops ***
    with LDA =   513 and INCX =     1

DSYR   with UPLO = 'U'

       N    50     100     200     300     400     500

            .0      .0      .0      .0      .0     25.1


DSYR   with UPLO = 'L'

       N    50     100     200     300     400     500

            .0      .0      .0      .0      .0     25.1


*** Speed of DSPR   in megaflops ***
    with INCX =     1

DSPR   with UPLO = 'U'

       N    50     100     200     300     400     500

            .0      .0     4.0      .0    16.1    25.1


DSPR   with UPLO = 'L'

       N    50     100     200     300     400     500
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            .0      .0      .0     9.0    16.0    25.0

DTPSV  with UPLO = 'L', TRANS = 'T'

       N    50     100     200     300     400     500

            .0      .0      .0     9.0    16.0    25.0


*** Speed of DGER   in megaflops ***
    with LDA =   513 and INCX = INCY =     1

DGER

       N    50     100     200     300     400     500
     M
    50      .0      .0      .0      .0      .0      .0
   100      .0      .0      .0     6.0      .0      .0
   200      .0      .0     8.0    12.0      .0    20.0
   300     3.0      .0      .0    18.0    24.0    30.0
   400      .0      .0    16.0    24.0    16.0    40.0
   500      .0      .0    20.0    30.0    40.0    25.0


*** Speed of DSYR   in megaflops ***
    with LDA =   513 and INCX =     1

DSYR   with UPLO = 'U'

       N    50     100     200     300     400     500

            .0      .0      .0      .0      .0     25.1


DSYR   with UPLO = 'L'

       N    50     100     200     300     400     500

            .0      .0      .0      .0    16.1    25.1


*** Speed of DSPR   in megaflops ***
    with INCX =     1

DSPR   with UPLO = 'U'

       N    50     100     200     300     400     500

            .0      .0      .0      .0    16.1    25.1


DSPR   with UPLO = 'L'

       N    50     100     200     300     400     500
```

*** Speed of DSYR2 in megaflops ***
with LDA = 513 and INCX = INCY = 1

DSYR2 with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.2	50.2

DSYR2 with UPLO = 'L'

N	50	100	200	300	400	500
	.0	.0	.0	18.1	32.2	50.2

*** Speed of DSPR2 in megaflops ***
with INCX = INCY = 1

DSPR2 with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.2	25.1

DSPR2 with UPLO = 'L'

N	50	100	200	300	400	500

*** Speed of DGEMM in megaflops ***
with LDA = 513

DGEMM with TRANSA = 'N', TRANSB = 'N'

K = 2

M \ N	50	100	200	300	400	500
50	.0	2.0	.0	.0	.0	.0
100	.0	.0	.0	.0	.0	20.0
200	.0	.0	16.0	.0	32.0	40.0
300	6.0	.0	12.0	36.0	48.0	30.0
400	.0	.0	32.0	24.0	32.0	26.7
500	10.0	20.0	.0	30.0	26.7	33.3

K = 16

.0 .0 .0 .0 .0 25.1

*** Speed of DSYR2 in megaflops ***
with LDA = 513 and INCX = INCY = 1

DSYR2 with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.2	50.2

DSYR2 with UPLO = 'L'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.2	50.2

*** Speed of DSPR2 in megaflops ***
with INCX = INCY = 1

DSPR2 with UPLO = 'U'

N	50	100	200	300	400	500
	.0	.0	.0	.0	32.2	50.2

DSPR2 with UPLO = 'L'

N	50	100	200	300	400	500
	.0	.0	.0	.0	.0	50.2

*** Speed of DGEMM in megaflops ***
with LDA = 513

DGEMM with TRANSA = 'N', TRANSB = 'N'

K = 2

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	8.0	.0
100	.0	.0	.0	12.0	.0	20.0
200	.0	.0	.0	24.0	.0	40.0
300	.0	.0	.0	36.0	48.0	60.0
400	.0	.0	32.0	48.0	64.0	80.0
500	.0	20.0	.0	60.0	80.0	50.0

K = 16

M \ N	50	100	200	300	400	500
50	.0	.0	32.0	.0	64.0	80.0
100	16.0	.0	64.0	96.0	128.0	80.0
200	32.0	64.0	64.0	96.0	85.3	80.0
300	.0	96.0	96.0	96.0	96.0	96.0
400	64.0	64.0	85.3	76.8	85.3	91.4
500	80.0	80.0	80.0	96.0	80.0	88.9

K = 32

M \ N	50	100	200	300	400	500
50	.0	32.0	64.0	.0	128.0	160.0
100	.0	64.0	128.0	96.0	85.3	80.0
200	64.0	64.0	85.3	76.8	85.3	80.0
300	96.0	96.0	96.0	115.2	85.3	96.0
400	64.0	64.0	85.3	109.7	102.4	98.5
500	160.0	80.0	91.4	96.0	91.4	114.3

K = 48

M \ N	50	100	200	300	400	500
50	.0	48.0	96.0	.0	96.0	240.0
100	.0	96.0	96.0	96.0	128.0	96.0
200	96.0	64.0	76.8	82.3	109.7	96.0
300	72.0	96.0	96.0	78.5	96.0	96.0
400	96.0	128.0	96.0	96.0	102.4	101.1
500	80.0	80.0	96.0	90.0	91.4	96.0

K = 64

M \ N	50	100	200	300	400	500
50	32.0	64.0	128.0	96.0	128.0	80.0
100	64.0	128.0	128.0	128.0	102.4	91.4
200	64.0	85.3	102.4	85.3	102.4	98.5
300	96.0	96.0	96.0	88.6	102.4	106.7
400	85.3	102.4	102.4	96.0	89.0	98.5
500	106.7	91.4	85.3	101.1	102.4	94.1

DGEMM with TRANSA = 'N', TRANSB = 'T'

K = 2

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	.0	.0
100	.0	.0	.0	.0	.0	20.0
200	.0	.0	.0	24.0	32.0	40.0

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	64.0	80.0
100	.0	32.0	64.0	96.0	128.0	160.0
200	.0	.0	128.0	96.0	128.0	160.0
300	48.0	96.0	192.0	144.0	128.0	120.0
400	64.0	128.0	128.0	128.0	128.0	128.0
500	80.0	80.0	160.0	120.0	213.3	114.3

K = 32

M \ N	50	100	200	300	400	500
50	.0	32.0	.0	96.0	128.0	160.0
100	32.0	.0	128.0	192.0	128.0	160.0
200	64.0	128.0	128.0	128.0	170.7	128.0
300	96.0	192.0	128.0	144.0	153.6	137.1
400	128.0	128.0	128.0	153.6	146.3	160.0
500	160.0	160.0	160.0	160.0	142.2	145.5

K = 48

M \ N	50	100	200	300	400	500
50	.0	48.0	96.0	.0	192.0	120.0
100	48.0	.0	192.0	144.0	128.0	160.0
200	96.0	96.0	128.0	144.0	153.6	137.1
300	144.0	144.0	192.0	144.0	144.0	130.9
400	192.0	192.0	128.0	164.6	139.6	147.7
500	120.0	160.0	137.1	160.0	137.1	150.0

K = 64

M \ N	50	100	200	300	400	500
50	.0	64.0	128.0	96.0	256.0	160.0
100	.0	128.0	256.0	192.0	128.0	128.0
200	128.0	128.0	170.7	128.0	146.3	142.2
300	96.0	96.0	128.0	144.0	153.6	160.0
400	128.0	170.7	128.0	153.6	146.3	150.6
500	160.0	160.0	142.2	147.7	150.6	168.4

DGEMM with TRANSA = 'N', TRANSB = 'T'

K = 2

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	.0	10.0
100	.0	.0	.0	.0	16.0	20.0
200	.0	.0	16.0	24.0	32.0	20.0

300	.0	.0	24.0	36.0	24.0	60.0
400	.0	16.0	16.0	48.0	32.0	40.0
500	.0	20.0	20.0	30.0	26.7	20.0

K = 16

M \ N	50	100	200	300	400	500
50	.0	.0	.0	48.0	64.0	.0
100	.0	.0	.0	96.0	128.0	80.0
200	.0	64.0	128.0	96.0	85.3	106.7
300	48.0	96.0	64.0	72.0	76.8	80.0
400	64.0	64.0	128.0	96.0	73.1	91.4
500	80.0	53.3	80.0	96.0	91.4	88.9

K = 32

M \ N	50	100	200	300	400	500
50	.0	32.0	64.0	48.0	64.0	160.0
100	.0	32.0	128.0	64.0	85.3	80.0
200	.0	128.0	85.3	128.0	85.3	91.4
300	96.0	96.0	64.0	82.3	85.3	137.1
400	128.0	128.0	102.4	96.0	102.4	98.5
500	80.0	64.0	128.0	96.0	98.5	94.1

K = 48

M \ N	50	100	200	300	400	500
50	.0	.0	96.0	144.0	96.0	120.0
100	.0	96.0	96.0	96.0	76.8	96.0
200	96.0	64.0	96.0	82.3	96.0	106.7
300	144.0	144.0	96.0	123.4	104.7	96.0
400	96.0	96.0	128.0	104.7	85.3	106.7
500	80.0	96.0	96.0	96.0	101.1	104.3

K = 64

M \ N	50	100	200	300	400	500
50	.0	64.0	42.7	192.0	64.0	64.0
100	64.0	64.0	64.0	96.0	128.0	71.1
200	128.0	85.3	64.0	85.3	93.1	80.0
300	64.0	76.8	96.0	104.7	90.4	87.3
400	85.3	102.4	78.8	96.0	89.0	85.3
500	80.0	106.7	91.4	101.1	98.5	88.9

DGEMM with TRANSA = 'T', TRANSB = 'N'

K = 2

300	.0	.0	.0	36.0	48.0	60.0
400	.0	.0	32.0	48.0	64.0	80.0
500	10.0	20.0	.0	.0	40.0	50.0

K = 16

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	64.0	80.0
100	.0	.0	.0	.0	128.0	160.0
200	.0	64.0	128.0	192.0	128.0	106.7
300	.0	.0	96.0	144.0	128.0	120.0
400	.0	128.0	128.0	128.0	102.4	106.7
500	80.0	160.0	106.7	120.0	128.0	114.3

K = 32

M \ N	50	100	200	300	400	500
50	.0	.0	.0	96.0	128.0	160.0
100	32.0	.0	128.0	192.0	128.0	106.7
200	.0	128.0	128.0	128.0	128.0	160.0
300	96.0	96.0	128.0	144.0	153.6	137.1
400	128.0	128.0	128.0	128.0	146.3	142.2
500	80.0	160.0	128.0	160.0	142.2	145.5

K = 48

M \ N	50	100	200	300	400	500
50	.0	48.0	96.0	144.0	192.0	120.0
100	.0	96.0	192.0	144.0	128.0	120.0
200	96.0	192.0	128.0	144.0	153.6	160.0
300	.0	144.0	144.0	172.8	128.0	160.0
400	192.0	192.0	153.6	144.0	139.6	147.7
500	120.0	120.0	160.0	160.0	137.1	150.0

K = 64

M \ N	50	100	200	300	400	500
50	32.0	.0	128.0	96.0	128.0	80.0
100	.0	128.0	128.0	128.0	128.0	128.0
200	128.0	128.0	128.0	192.0	146.3	160.0
300	192.0	192.0	153.6	128.0	139.6	137.1
400	128.0	128.0	146.3	128.0	157.5	134.7
500	106.7	128.0	116.4	160.0	142.2	145.5

DGEMM with TRANSA = 'T', TRANSB = 'N'

K = 2

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	.0	.0
100	.0	4.0	.0	.0	.0	20.0
200	.0	.0	16.0	24.0	32.0	40.0
300	.0	.0	24.0	36.0	24.0	30.0
400	.0	16.0	32.0	48.0	21.3	40.0
500	.0	20.0	40.0	30.0	26.7	33.3

K = 16

M \ N	50	100	200	300	400	500
50	.0	.0	32.0	48.0	64.0	80.0
100	.0	32.0	.0	96.0	64.0	80.0
200	.0	64.0	128.0	64.0	128.0	106.7
300	.0	96.0	64.0	72.0	76.8	68.6
400	64.0	128.0	85.3	96.0	85.3	80.0
500	80.0	53.3	80.0	80.0	80.0	88.9

K = 32

M \ N	50	100	200	300	400	500
50	16.0	.0	64.0	96.0	128.0	80.0
100	.0	64.0	64.0	192.0	85.3	106.7
200	.0	128.0	85.3	128.0	85.3	106.7
300	48.0	96.0	96.0	82.3	85.3	106.7
400	64.0	85.3	102.4	85.3	93.1	98.5
500	80.0	80.0	91.4	87.3	98.5	94.1

K = 48

M \ N	50	100	200	300	400	500
50	.0	48.0	96.0	144.0	96.0	120.0
100	48.0	96.0	96.0	96.0	76.8	96.0
200	96.0	64.0	96.0	115.2	96.0	87.3
300	72.0	96.0	115.2	86.4	104.7	102.9
400	64.0	96.0	96.0	104.7	96.0	101.1
500	80.0	120.0	87.3	90.0	101.1	96.0

K = 64

M \ N	50	100	200	300	400	500
50	.0	64.0	64.0	96.0	85.3	80.0
100	64.0	64.0	85.3	128.0	85.3	91.4
200	128.0	85.3	102.4	96.0	93.1	98.5
300	64.0	96.0	85.3	96.0	109.7	96.0
400	85.3	102.4	85.3	90.4	102.4	91.4

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	8.0	.0
100	.0	.0	.0	.0	16.0	20.0
200	.0	8.0	.0	24.0	32.0	40.0
300	.0	.0	24.0	36.0	48.0	30.0
400	8.0	16.0	32.0	48.0	32.0	40.0
500	10.0	20.0	40.0	60.0	40.0	33.3

K = 16

M \ N	50	100	200	300	400	500
50	.0	.0	32.0	.0	.0	.0
100	.0	.0	64.0	96.0	128.0	80.0
200	.0	.0	128.0	96.0	85.3	106.7
300	.0	96.0	96.0	144.0	128.0	160.0
400	.0	128.0	128.0	128.0	128.0	160.0
500	80.0	160.0	106.7	160.0	128.0	133.3

K = 32

M \ N	50	100	200	300	400	500
50	.0	.0	.0	96.0	128.0	160.0
100	32.0	.0	128.0	96.0	128.0	160.0
200	64.0	128.0	64.0	192.0	170.7	128.0
300	96.0	192.0	128.0	192.0	128.0	137.1
400	128.0	256.0	128.0	153.6	128.0	142.2
500	160.0	160.0	106.7	137.1	160.0	133.3

K = 48

M \ N	50	100	200	300	400	500
50	.0	48.0	96.0	144.0	96.0	240.0
100	.0	96.0	96.0	144.0	128.0	160.0
200	96.0	192.0	128.0	144.0	128.0	160.0
300	144.0	96.0	115.2	144.0	192.0	144.0
400	96.0	128.0	192.0	128.0	139.6	147.7
500	120.0	160.0	160.0	144.0	147.7	160.0

K = 64

M \ N	50	100	200	300	400	500
50	.0	64.0	128.0	96.0	128.0	106.7
100	.0	128.0	128.0	384.0	128.0	128.0
200	128.0	128.0	170.7	109.7	128.0	160.0
300	96.0	128.0	128.0	164.6	153.6	147.7
400	128.0	170.7	146.3	153.6	136.5	142.2

500	80.0	91.4	85.3	91.4	91.4	91.4

DGEMM with TRANSA = 'T', TRANSB = 'T'

K = 2

M \ N	50	100	200	300	400	500
50	.0	.0	.0	.0	8.0	.0
100	.0	4.0	8.0	12.0	16.0	20.0
200	.0	.0	16.0	.0	32.0	40.0
300	6.0	.0	24.0	36.0	24.0	30.0
400	.0	16.0	32.0	48.0	32.0	40.0
500	.0	.0	20.0	30.0	26.7	33.3

K = 16

M \ N	50	100	200	300	400	500
50	.0	.0	32.0	48.0	64.0	80.0
100	.0	.0	64.0	96.0	42.7	80.0
200	32.0	.0	64.0	64.0	64.0	80.0
300	48.0	96.0	96.0	72.0	96.0	96.0
400	.0	128.0	64.0	76.8	73.1	80.0
500	40.0	80.0	64.0	96.0	80.0	72.7

K = 32

M \ N	50	100	200	300	400	500
50	.0	32.0	.0	96.0	64.0	80.0
100	32.0	64.0	128.0	96.0	64.0	80.0
200	64.0	42.7	85.3	96.0	73.1	91.4
300	96.0	64.0	128.0	82.3	85.3	96.0
400	128.0	128.0	128.0	96.0	93.1	85.3
500	80.0	106.7	91.4	96.0	106.7	100.0

K = 48

M \ N	50	100	200	300	400	500
50	.0	.0	96.0	72.0	64.0	120.0
100	48.0	96.0	96.0	144.0	96.0	96.0
200	96.0	192.0	128.0	82.3	96.0	106.7
300	144.0	144.0	96.0	96.0	115.2	102.9
400	48.0	96.0	96.0	96.0	96.0	120.0
500	80.0	68.6	96.0	102.9	91.4	100.0

K = 64

N	50	100	200	300	400	500

500	160.0	128.0	128.0	160.0	160.0	152.4

DGEMM with TRANSA = 'T', TRANSB = 'T'

K = 2

M \ N	50	100	200	300	400	500
50	.0	.0	.0	6.0	.0	10.0
100	.0	.0	.0	.0	16.0	20.0
200	.0	.0	.0	.0	32.0	.0
300	.0	.0	24.0	36.0	48.0	30.0
400	.0	16.0	.0	48.0	64.0	40.0
500	.0	.0	40.0	60.0	80.0	50.0

K = 16

M \ N	50	100	200	300	400	500
50	.0	.0	32.0	.0	.0	.0
100	.0	.0	64.0	.0	128.0	160.0
200	32.0	.0	128.0	192.0	128.0	106.7
300	48.0	96.0	96.0	144.0	128.0	120.0
400	.0	128.0	128.0	128.0	85.3	106.7
500	80.0	80.0	160.0	120.0	128.0	160.0

K = 32

M \ N	50	100	200	300	400	500
50	.0	.0	.0	96.0	128.0	80.0
100	32.0	.0	128.0	192.0	85.3	106.7
200	.0	64.0	128.0	128.0	128.0	160.0
300	.0	192.0	192.0	144.0	128.0	137.1
400	128.0	128.0	170.7	256.0	128.0	128.0
500	80.0	106.7	160.0	137.1	128.0	145.5

K = 48

M \ N	50	100	200	300	400	500
50	.0	48.0	96.0	144.0	96.0	120.0
100	48.0	96.0	192.0	144.0	128.0	160.0
200	48.0	192.0	128.0	115.2	192.0	137.1
300	72.0	144.0	144.0	144.0	164.6	144.0
400	192.0	192.0	128.0	144.0	139.6	137.1
500	240.0	160.0	160.0	130.9	147.7	150.0

K = 64

N	50	100	200	300	400	500

M						
50	.0	64.0	64.0	96.0	64.0	64.0
100	.0	128.0	128.0	96.0	73.1	71.1
200	128.0	85.3	102.4	76.8	78.8	85.3
300	96.0	96.0	85.3	96.0	90.4	101.1
400	64.0	85.3	85.3	109.7	93.1	94.8
500	64.0	106.7	98.5	101.1	94.8	100.0

*** Speed of DSYMM in megaflops ***
with LDA = 513

DSYMM with SIDE = 'L', UPLO = 'U'

M \ N	50	100	200	300	400	500
50	.0	.0	100.0	75.0	66.7	125.0
100	50.0	100.0	100.0	100.0	72.7	90.9
200	100.0	80.0	94.1	88.9	94.1	93.0
300	81.8	85.7	87.8	91.5	92.3	90.9
400	94.1	86.5	95.5	90.6	94.1	95.2
500	86.2	89.3	89.3	96.2	90.9	92.3

DSYMM with SIDE = 'L', UPLO = 'L'

M \ N	50	100	200	300	400	500
50	.0	.0	100.0	75.0	66.7	125.0
100	100.0	100.0	57.1	75.0	114.3	83.3
200	100.0	100.0	84.2	85.7	91.4	95.2
300	90.0	85.7	90.0	90.0	93.5	93.8
400	84.2	91.4	92.8	88.1	94.8	95.2
500	83.3	89.3	89.3	91.5	85.1	93.6

DSYMM with SIDE = 'R', UPLO = 'U'

M \ N	50	100	200	300	400	500
50	25.0	100.0	66.7	81.8	94.1	86.2
100	50.0	100.0	80.0	81.8	94.1	87.7
200	100.0	100.0	94.1	94.7	91.4	90.9
300	75.0	85.7	104.3	83.1	97.0	89.8
400	66.7	72.7	88.9	92.3	92.1	92.6
500	83.3	90.9	85.1	94.7	90.9	95.1

DSYMM with SIDE = 'R', UPLO = 'L'

M \ N	50	100	200	300	400	500
50	.0	100.0	80.0	81.8	84.2	83.3
100	.0	100.0	88.9	90.0	86.5	80.6
200	100.0	57.1	88.9	94.7	90.1	91.7
300	75.0	75.0	82.8	101.9	85.7	95.5

M						
50	.0	64.0	128.0	96.0	128.0	106.7
100	64.0	128.0	128.0	128.0	128.0	128.0
200	128.0	128.0	128.0	153.6	170.7	142.2
300	192.0	128.0	128.0	144.0	170.7	147.7
400	128.0	102.4	113.8	139.6	157.5	150.6
500	160.0	160.0	142.2	147.7	142.2	152.4

*** Speed of DSYMM in megaflops ***
with LDA = 513

DSYMM with SIDE = 'L', UPLO = 'U'

M \ N	50	100	200	300	400	500
50	25.0	.0	100.0	150.0	200.0	125.0
100	100.0	100.0	200.0	150.0	114.3	142.9
200	100.0	114.3	160.0	160.0	139.1	137.9
300	150.0	120.0	171.4	142.1	141.2	138.5
400	114.3	128.0	139.1	145.5	140.7	142.9
500	131.6	147.1	147.1	140.2	146.0	149.7

DSYMM with SIDE = 'L', UPLO = 'L'

M \ N	50	100	200	300	400	500
50	.0	50.0	100.0	75.0	200.0	125.0
100	100.0	200.0	133.3	200.0	133.3	166.7
200	200.0	160.0	145.5	141.2	152.4	148.1
300	225.0	128.6	138.5	145.9	146.9	136.4
400	114.3	152.4	128.0	143.3	139.1	141.6
500	131.6	135.1	142.9	145.6	142.9	140.4

DSYMM with SIDE = 'R', UPLO = 'U'

M \ N	50	100	200	300	400	500
50	.0	100.0	133.3	112.5	123.1	125.0
100	50.0	200.0	133.3	120.0	133.3	131.6
200	.0	200.0	123.1	138.5	133.3	142.9
300	150.0	150.0	141.2	135.0	147.7	142.9
400	100.0	133.3	133.3	138.5	136.2	135.1
500	250.0	142.9	129.0	140.6	140.4	148.8

DSYMM with SIDE = 'R', UPLO = 'L'

M \ N	50	100	200	300	400	500
50	.0	100.0	133.3	128.6	106.7	125.0
100	.0	100.0	133.3	128.6	128.0	131.6
200	100.0	100.0	133.3	133.3	139.1	137.0
300	150.0	150.0	141.2	154.3	147.7	145.6

400	100.0	100.0	94.1	90.0	91.4	101.5
500	125.0	125.0	97.6	94.7	94.7	94.7

*** Speed of DSYRK in megaflops ***
with LDA = 513

DSYRK with UPLO = 'U', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	.0	.0	18.1	32.1	16.7
16	.0	.0	64.3	144.5	64.2	80.2
32	.0	16.2	64.3	96.3	102.7	89.1
48	.0	48.5	96.5	72.2	96.2	100.2
64	16.3	.0	128.6	115.6	79.0	89.1

DSYRK with UPLO = 'U', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	.0	18.1	32.1	25.1
16	.0	.0	.0	72.2	85.5	100.2
32	.0	.0	64.3	96.3	85.5	100.2
48	.0	48.5	193.0	86.7	96.2	85.9
64	.0	64.6	85.8	96.3	93.3	94.3

DSYRK with UPLO = 'L', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	32.1	25.1
16	.0	.0	64.3	144.5	85.5	66.8
32	.0	32.3	128.6	96.3	85.5	100.2
48	.0	48.5	96.5	144.5	96.2	109.3
64	.0	64.6	128.6	96.3	128.3	89.1

DSYRK with UPLO = 'L', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	8.0	18.1	32.1	25.1
16	.0	16.2	32.2	48.2	64.2	66.8
32	.0	32.3	64.3	96.3	85.5	114.5
48	12.2	.0	96.5	86.7	85.5	100.2
64	.0	64.6	257.3	82.6	79.0	100.2

*** Speed of DSYR2K in megaflops ***
with LDA = 513

DSYR2K with UPLO = 'U', TRANS = 'N'

400	100.0	200.0	133.3	144.0	150.6	146.0
500	125.0	142.9	142.9	145.2	145.5	146.2

*** Speed of DSYRK in megaflops ***
with LDA = 513

DSYRK with UPLO = 'U', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	.0	.0	18.1	32.1	50.1
16	.0	16.2	.0	144.5	85.5	133.6
32	.0	.0	128.6	144.5	128.3	133.6
48	.0	.0	193.0	216.7	154.0	120.2
64	.0	64.6	85.8	192.6	146.7	145.7

DSYRK with UPLO = 'U', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	32.1	50.1
16	.0	.0	64.3	72.2	128.3	80.2
32	.0	.0	128.6	96.3	128.3	160.3
48	.0	.0	193.0	144.5	128.3	171.8
64	.0	.0	128.6	192.6	128.3	145.7

DSYRK with UPLO = 'L', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	50.1
16	.0	.0	.0	72.2	128.3	133.6
32	.0	.0	.0	96.3	128.3	133.6
48	12.2	.0	96.5	144.5	154.0	133.6
64	.0	.0	128.6	144.5	146.7	160.3

DSYRK with UPLO = 'L', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	32.1	50.1
16	.0	.0	.0	144.5	85.5	200.4
32	.0	32.3	128.6	144.5	171.1	133.6
48	.0	48.5	193.0	216.7	110.0	109.3
64	.0	64.6	128.6	192.6	146.7	160.3

*** Speed of DSYR2K in megaflops ***
with LDA = 513

DSYR2K with UPLO = 'U', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	4.0	.0	.0	32.0	50.0
16	.0	32.0	32.0	32.0	30.1	26.7
32	16.0	21.3	32.0	32.0	31.0	29.6
48	.0	19.2	34.9	28.8	32.7	30.4
64	32.0	25.6	30.1	32.9	33.0	30.8

DSYR2K with UPLO = 'U', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	4.0	4.0	4.0	4.0	3.6
16	8.0	32.0	18.3	16.9	19.0	16.7
32	.0	21.3	21.3	23.0	20.9	22.5
48	.0	24.0	27.4	26.2	25.2	25.8
64	32.0	32.0	26.9	27.4	26.6	28.3

N / K	50	100	200	300	400	500
2	.0	.0	.0	.0	64.0	100.1
16	.0	32.0	128.0	57.6	46.5	53.3
32	.0	64.0	51.2	44.3	41.0	42.1
48	.0	96.0	42.7	48.0	39.4	42.9
64	32.0	32.0	39.4	44.3	39.4	43.2

DSYR2K with UPLO = 'U', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	4.0	.0	36.0	12.8	9.1
16	.0	.0	42.7	32.0	30.1	28.6
32	.0	21.3	42.7	38.4	34.1	34.0
48	.0	32.0	38.4	39.3	38.4	36.9
64	.0	32.0	42.7	42.7	37.9	37.6

DSYR2K with UPLO = 'L', TRANS = 'N'

N / K	50	100	200	300	400	500
2	.0	.0	.0	36.0	64.0	.0
16	.0	.0	64.0	48.0	64.0	42.1
32	16.0	64.0	51.2	44.3	39.4	41.0
48	24.0	32.0	42.7	43.2	40.4	43.6
64	.0	42.7	39.4	44.3	38.6	42.1

DSYR2K with UPLO = 'L', TRANS = 'T'

N / K	50	100	200	300	400	500
2	.0	.0	16.0	18.0	10.7	10.0
16	8.0	32.0	32.0	32.0	28.4	28.6
32	.0	32.0	36.6	33.9	35.3	34.0
48	.0	32.0	34.9	36.0	37.5	34.8
64	32.0	32.0	42.7	38.4	37.2	37.6

*** Speed of DTRMM in megaflops ***
with LDA = 513

DTRMM with SIDE = 'L', UPLO = 'U', TRANS = 'N'

N / M	50	100	200	300	400	500
50	.0	.0	.0	75.0	100.0	125.0
100	50.0	.0	200.0	300.0	133.3	125.0
200	200.0	100.0	160.0	133.3	145.5	125.0
300	112.5	128.6	138.5	142.1	144.0	145.2
400	133.3	145.5	145.5	145.5	152.4	142.9
500	138.9	156.3	147.1	138.9	140.8	145.3

DTRMM with SIDE = 'L', UPLO = 'U', TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	.0	50.0	75.0	100.0	.0
100	50.0	100.0	200.0	300.0	133.3	166.7
200	100.0	133.3	160.0	150.0	133.3	142.9
300	112.5	128.6	138.5	135.0	138.5	145.2
400	114.3	160.0	145.5	145.5	136.2	145.5
500	138.9	138.9	138.9	147.1	142.9	137.4

DTRMM with SIDE = 'L', UPLO = 'L', TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	.0	50.0	75.0	.0	125.0
100	50.0	100.0	.0	150.0	133.3	125.0
200	100.0	200.0	160.0	133.3	133.3	142.9
300	150.0	150.0	138.5	142.1	138.5	145.2
400	133.3	145.5	145.5	137.1	152.4	150.9
500	138.9	156.3	147.1	138.9	151.5	147.1

DTRMM with SIDE = 'L', UPLO = 'L', TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	.0	50.0	75.0	.0	125.0
100	50.0	100.0	100.0	150.0	133.3	125.0
200	200.0	133.3	133.3	133.3	133.3	142.9
300	112.5	150.0	150.0	135.0	150.0	136.4
400	114.3	123.1	145.5	145.5	145.5	148.1
500	138.9	131.6	142.9	141.5	140.8	143.7

DTRMM with SIDE = 'R', UPLO = 'U', TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	50.0	200.0	150.0	133.3	138.9
100	25.0	100.0	200.0	128.6	123.1	138.9
200	50.0	200.0	160.0	138.5	152.4	142.9
300	.0	100.0	133.3	142.1	145.5	144.2
400	50.0	100.0	123.1	138.5	136.2	140.8
500	125.0	125.0	142.9	145.2	137.9	143.7

DTRMM with SIDE = 'R', UPLO = 'U', TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	50.0	100.0	90.0	114.3	113.6
100	.0	100.0	133.3	128.6	123.1	131.6
200	.0	100.0	133.3	138.5	133.3	142.9

300	75.0	150.0	133.3	142.1	145.5	138.9
400	100.0	133.3	133.3	138.5	142.2	140.8
500	125.0	166.7	153.8	136.4	142.9	148.8

DTRMM with SIDE = 'R', UPLO = 'L', TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	50.0	100.0	112.5	114.3	138.9
100	.0	.0	133.3	150.0	145.5	156.3
200	.0	100.0	133.3	150.0	133.3	128.2
300	75.0	150.0	133.3	135.0	145.5	141.5
400	100.0	133.3	145.5	138.5	145.5	147.1
500	125.0	125.0	142.9	140.6	148.1	142.0

DTRMM with SIDE = 'R', UPLO = 'L', TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	50.0	100.0	112.5	114.3	113.6
100	.0	100.0	133.3	128.6	123.1	131.6
200	.0	100.0	133.3	128.6	145.5	138.9
300	75.0	150.0	133.3	158.8	145.5	144.2
400	50.0	133.3	123.1	138.5	142.2	149.3
500	125.0	125.0	142.9	145.2	140.4	142.0

*** Speed of DTRSM in megaflops ***
with LDA = 513

DTRSM with SIDE = 'L', UPLO = 'U', TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	.0	.0	75.0	.0	.0
100	.0	100.0	100.0	150.0	133.3	166.7
200	200.0	133.3	133.3	133.3	145.5	142.9
300	150.0	128.6	128.6	142.1	163.6	145.2
400	133.3	160.0	152.4	141.2	156.1	150.9
500	125.0	138.9	135.1	138.9	169.5	148.8

DTRSM with SIDE = 'L', UPLO = 'U', TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	.0	50.0	.0	.0	125.0
100	.0	100.0	100.0	100.0	133.3	166.7
200	200.0	200.0	200.0	133.3	145.5	142.9
300	150.0	180.0	138.5	158.8	150.0	145.2
400	133.3	133.3	139.1	145.5	139.1	148.1
500	138.9	147.1	151.5	150.0	138.9	140.4

DTRSM with SIDE = 'L', UPLO = 'L', TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	.0	50.0	75.0	100.0	.0
100	.0	.0	200.0	150.0	133.3	125.0
200	100.0	100.0	133.3	171.4	145.5	142.9
300	90.0	128.6	150.0	128.6	156.5	150.0
400	133.3	145.5	145.5	150.0	148.8	156.9
500	125.0	166.7	156.3	141.5	151.5	152.4

DTRSM with SIDE = 'L', UPLO = 'L', TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	.0	50.0	.0	.0	125.0
100	50.0	100.0	200.0	300.0	133.3	166.7
200	200.0	200.0	114.3	171.4	145.5	133.3
300	150.0	128.6	150.0	142.1	144.0	145.2
400	160.0	145.5	139.1	145.5	152.4	153.8
500	138.9	156.3	138.9	141.5	140.8	142.0

DTRSM with SIDE = 'R', UPLO = 'U', TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	50.0	200.0	150.0	133.3	138.9
100	.0	100.0	133.3	128.6	145.5	131.6
200	.0	200.0	133.3	138.5	139.1	138.9
300	.0	100.0	120.0	150.0	141.2	147.1
400	100.0	100.0	133.3	138.5	145.5	147.1
500	125.0	125.0	133.3	140.6	150.9	147.1

DTRSM with SIDE = 'R', UPLO = 'U', TRANS = 'T'

M \ N	50	100	200	300	400	500
50	.0	50.0	100.0	112.5	114.3	125.0
100	25.0	.0	133.3	128.6	145.5	131.6
200	50.0	200.0	133.3	138.5	128.0	142.9
300	.0	150.0	133.3	135.0	145.5	136.4
400	100.0	133.3	133.3	144.0	148.8	142.9
500	125.0	125.0	133.3	150.0	137.9	143.7

DTRSM with SIDE = 'R', UPLO = 'L', TRANS = 'N'

M \ N	50	100	200	300	400	500
50	.0	50.0	200.0	112.5	133.3	138.9
100	.0	100.0	133.3	150.0	133.3	138.9
200	50.0	200.0	200.0	138.5	145.5	147.1
300	75.0	100.0	133.3	150.0	145.5	153.1

400	100.0	133.3	133.3	138.5	148.8	142.9
500	125.0	125.0	133.3	140.6	148.1	142.0

DTRSM with SIDE = 'R', UPLO = 'L', TRANS = 'T'

N	50	100	200	300	400	500
M						
50	.0	50.0	66.7	112.5	133.3	138.9
100	25.0	100.0	133.3	150.0	123.1	131.6
200	.0	200.0	133.3	150.0	133.3	142.9
300	75.0	100.0	133.3	135.0	145.5	138.9
400	100.0	100.0	160.0	144.0	136.2	144.9
500	125.0	125.0	125.0	132.4	140.4	145.3

End of tests
Total time used = 205.21 seconds

LAPACK VERSION 1.1, released March 31, 1993

BLAS timing, DOUBLE PRECISION data, M small

The following parameter values will be used:

M:	2	16	32	48	64	
N:	50	100	200	300	400	500
K:	50	100	200	300	400	500
INCX:	1					
LDA:	513					

The minimum time a subroutine will be timed = .000 seconds

>>>>> Timing data <<<<<

*** Speed of DGEMM in megaflops ***
with LDA = 513

DGEMM with TRANSA = 'N', TRANSB = 'N'

K = 50

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	8.0	10.0
16	.0	.0	32.0	48.0	64.0	.0
32	.0	.0	.0	96.0	128.0	80.0
48	.0	48.0	96.0	144.0	96.0	80.0
64	.0	.0	128.0	96.0	85.3	106.7

K = 100

M \ N	50	100	200	300	400	500
2	.0	.0	.0	12.0	16.0	20.0
16	.0	32.0	64.0	48.0	128.0	.0
32	.0	64.0	128.0	192.0	85.3	80.0
48	.0	.0	96.0	96.0	128.0	80.0
64	64.0	128.0	128.0	76.8	128.0	106.7

K = 200

M \ N	50	100	200	300	400	500
2	4.0	.0	.0	.0	32.0	.0
16	.0	64.0	128.0	192.0	85.3	80.0
32	64.0	64.0	85.3	76.8	102.4	64.0
48	96.0	96.0	96.0	115.2	96.0	96.0
64	64.0	256.0	102.4	85.3	93.1	106.7

LAPACK VERSION 2.0, released September 30, 1994

BLAS timing, DOUBLE PRECISION data, M small

The following parameter values will be used:

M:	2	16	32	48	64	
N:	50	100	200	300	400	500
K:	50	100	200	300	400	500
INCX:	1					
LDA:	513					

The minimum time a subroutine will be timed = .000 seconds

>>>>> Timing data <<<<<

*** Speed of DGEMM in megaflops ***
with LDA = 513

DGEMM with TRANSA = 'N', TRANSB = 'N'

K = 50

M \ N	50	100	200	300	400	500
2	.0	.0	.0	6.0	.0	10.0
16	.0	.0	.0	.0	64.0	80.0
32	.0	32.0	.0	.0	128.0	160.0
48	24.0	.0	96.0	144.0	192.0	240.0
64	.0	.0	128.0	192.0	128.0	160.0

K = 100

M \ N	50	100	200	300	400	500
2	2.0	.0	.0	12.0	.0	.0
16	16.0	.0	64.0	96.0	128.0	160.0
32	32.0	.0	128.0	192.0	128.0	160.0
48	48.0	.0	192.0	144.0	128.0	160.0
64	.0	128.0	128.0	128.0	170.7	128.0

K = 200

M \ N	50	100	200	300	400	500
2	4.0	.0	16.0	24.0	.0	40.0
16	.0	.0	128.0	96.0	256.0	106.7
32	64.0	128.0	128.0	128.0	170.7	128.0
48	96.0	96.0	128.0	192.0	128.0	137.1
64	128.0	128.0	128.0	128.0	170.7	142.2

K = 300

M \ N	50	100	200	300	400	500
2	.0	.0	.0	36.0	48.0	60.0
16	.0	96.0	64.0	57.6	96.0	96.0
32	48.0	96.0	76.8	115.2	96.0	96.0
48	72.0	72.0	96.0	86.4	104.7	110.8
64	96.0	76.8	109.7	96.0	96.0	91.4

K = 400

M \ N	50	100	200	300	400	500
2	.0	.0	.0	48.0	64.0	40.0
16	64.0	64.0	128.0	96.0	102.4	80.0
32	64.0	85.3	85.3	85.3	85.3	91.4
48	96.0	96.0	96.0	96.0	96.0	101.1
64	85.3	102.4	85.3	90.4	93.1	91.4

K = 500

M \ N	50	100	200	300	400	500
2	.0	20.0	.0	60.0	80.0	100.0
16	80.0	160.0	80.0	96.0	91.4	100.0
32	80.0	80.0	80.0	87.3	91.4	84.2
48	120.0	80.0	106.7	96.0	96.0	100.0
64	80.0	80.0	91.4	91.4	80.0	88.9

DGEMM with TRANSA = 'N', TRANSB = 'T'

K = 50

M \ N	50	100	200	300	400	500
2	.0	2.0	.0	6.0	8.0	10.0
16	.0	.0	32.0	48.0	64.0	80.0
32	.0	32.0	64.0	96.0	128.0	80.0
48	.0	48.0	96.0	48.0	96.0	60.0
64	.0	64.0	64.0	96.0	85.3	106.7

K = 100

M \ N	50	100	200	300	400	500
2	.0	4.0	.0	.0	16.0	20.0
16	.0	32.0	64.0	48.0	64.0	80.0
32	.0	.0	128.0	192.0	85.3	64.0
48	.0	96.0	64.0	96.0	76.8	120.0
64	.0	128.0	128.0	96.0	102.4	91.4

K = 300

M \ N	50	100	200	300	400	500
2	.0	12.0	24.0	36.0	48.0	30.0
16	.0	.0	96.0	96.0	192.0	160.0
32	.0	96.0	192.0	115.2	192.0	120.0
48	144.0	144.0	144.0	144.0	144.0	180.0
64	192.0	192.0	153.6	128.0	153.6	137.1

K = 400

M \ N	50	100	200	300	400	500
2	.0	.0	32.0	48.0	.0	80.0
16	64.0	.0	256.0	128.0	102.4	128.0
32	128.0	85.3	128.0	128.0	128.0	142.2
48	192.0	128.0	153.6	128.0	153.6	147.7
64	128.0	128.0	146.3	153.6	157.5	142.2

K = 500

M \ N	50	100	200	300	400	500
2	.0	.0	40.0	60.0	80.0	100.0
16	80.0	160.0	106.7	120.0	160.0	133.3
32	80.0	160.0	128.0	137.1	182.9	123.1
48	120.0	160.0	137.1	160.0	128.0	141.2
64	160.0	106.7	142.2	147.7	134.7	145.5

DGEMM with TRANSA = 'N', TRANSB = 'T'

K = 50

M \ N	50	100	200	300	400	500
2	.0	.0	4.0	.0	8.0	10.0
16	.0	.0	32.0	.0	.0	80.0
32	.0	.0	.0	48.0	128.0	160.0
48	.0	48.0	.0	144.0	96.0	120.0
64	32.0	.0	128.0	192.0	85.3	160.0

K = 100

M \ N	50	100	200	300	400	500
2	2.0	.0	8.0	.0	16.0	20.0
16	16.0	.0	64.0	96.0	128.0	80.0
32	32.0	.0	128.0	96.0	128.0	160.0
48	48.0	96.0	96.0	96.0	96.0	120.0
64	.0	128.0	85.3	128.0	128.0	128.0

K = 200

M \ N	50	100	200	300	400	500
2	4.0	.0	16.0	12.0	32.0	20.0
16	16.0	64.0	128.0	96.0	64.0	80.0
32	.0	128.0	85.3	96.0	73.1	91.4
48	48.0	96.0	96.0	82.3	96.0	96.0
64	64.0	85.3	85.3	96.0	93.1	91.4

K = 300

M \ N	50	100	200	300	400	500
2	.0	.0	24.0	18.0	24.0	12.0
16	48.0	96.0	96.0	57.6	76.8	60.0
32	96.0	96.0	76.8	96.0	85.3	96.0
48	72.0	72.0	72.0	108.0	82.3	96.0
64	64.0	128.0	85.3	88.6	90.4	96.0

K = 400

M \ N	50	100	200	300	400	500
2	8.0	16.0	32.0	48.0	21.3	26.7
16	64.0	64.0	64.0	96.0	64.0	80.0
32	128.0	85.3	102.4	76.8	93.1	80.0
48	96.0	96.0	85.3	96.0	90.4	96.0
64	128.0	73.1	93.1	90.4	89.0	88.3

K = 500

M \ N	50	100	200	300	400	500
2	.0	20.0	20.0	30.0	20.0	20.0
16	80.0	80.0	53.3	80.0	80.0	66.7
32	160.0	80.0	64.0	87.3	85.3	76.2
48	120.0	80.0	106.7	96.0	91.4	88.9
64	80.0	91.4	85.3	91.4	88.3	91.4

DGEMM with TRANSA = 'T', TRANSB = 'N'

K = 50

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	48.0	64.0	40.0
32	.0	.0	.0	96.0	64.0	160.0
48	24.0	.0	96.0	72.0	64.0	80.0
64	.0	64.0	64.0	96.0	128.0	106.7

K = 200

M \ N	50	100	200	300	400	500
2	.0	8.0	16.0	24.0	16.0	.0
16	32.0	64.0	128.0	96.0	64.0	80.0
32	32.0	128.0	128.0	96.0	128.0	106.7
48	.0	192.0	128.0	115.2	128.0	120.0
64	128.0	128.0	85.3	128.0	146.3	116.4

K = 300

M \ N	50	100	200	300	400	500
2	.0	.0	24.0	36.0	24.0	20.0
16	48.0	96.0	96.0	144.0	76.8	96.0
32	96.0	96.0	128.0	115.2	109.7	106.7
48	144.0	96.0	144.0	123.4	115.2	110.8
64	192.0	192.0	128.0	128.0	128.0	120.0

K = 400

M \ N	50	100	200	300	400	500
2	8.0	16.0	32.0	24.0	32.0	20.0
16	64.0	64.0	128.0	96.0	73.1	91.4
32	128.0	128.0	102.4	109.7	113.8	106.7
48	96.0	128.0	128.0	115.2	118.2	120.0
64	128.0	128.0	102.4	118.2	120.5	128.0

K = 500

M \ N	50	100	200	300	400	500
2	10.0	20.0	13.3	15.0	26.7	25.0
16	80.0	53.3	106.7	96.0	106.7	88.9
32	160.0	106.7	91.4	106.7	106.7	114.3
48	60.0	96.0	137.1	120.0	120.0	141.2
64	160.0	106.7	116.4	120.0	128.0	128.0

DGEMM with TRANSA = 'T', TRANSB = 'N'

K = 50

M \ N	50	100	200	300	400	500
2	.0	.0	.0	6.0	.0	10.0
16	.0	.0	.0	.0	.0	.0
32	16.0	.0	64.0	.0	128.0	160.0
48	24.0	.0	96.0	144.0	192.0	120.0
64	.0	.0	.0	192.0	128.0	106.7

K = 100

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	64.0	96.0	64.0	80.0
32	.0	64.0	64.0	96.0	85.3	106.7
48	.0	96.0	192.0	144.0	96.0	120.0
64	64.0	128.0	85.3	128.0	85.3	91.4

K = 200

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	32.0	40.0
16	.0	64.0	128.0	192.0	85.3	106.7
32	.0	.0	85.3	128.0	73.1	91.4
48	96.0	96.0	96.0	82.3	76.8	96.0
64	64.0	85.3	102.4	96.0	85.3	106.7

K = 300

M \ N	50	100	200	300	400	500
2	6.0	.0	.0	36.0	48.0	60.0
16	48.0	96.0	64.0	96.0	96.0	96.0
32	48.0	96.0	96.0	82.3	85.3	106.7
48	144.0	144.0	96.0	96.0	82.3	102.9
64	96.0	96.0	85.3	104.7	85.3	91.4

K = 400

M \ N	50	100	200	300	400	500
2	.0	16.0	32.0	.0	64.0	40.0
16	64.0	128.0	128.0	76.8	102.4	106.7
32	128.0	85.3	85.3	85.3	85.3	85.3
48	96.0	76.8	109.7	96.0	96.0	101.1
64	85.3	85.3	93.1	90.4	85.3	94.8

K = 500

M \ N	50	100	200	300	400	500
2	.0	.0	40.0	60.0	80.0	33.3
16	80.0	80.0	106.7	96.0	91.4	100.0
32	80.0	80.0	91.4	87.3	85.3	94.1
48	80.0	96.0	96.0	102.9	106.7	104.3
64	80.0	91.4	98.5	83.5	98.5	91.4

K = 100

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	16.0	20.0
16	.0	.0	64.0	.0	128.0	160.0
32	.0	.0	128.0	192.0	128.0	160.0
48	.0	96.0	96.0	144.0	192.0	160.0
64	64.0	128.0	128.0	128.0	128.0	160.0

K = 200

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	40.0
16	.0	.0	.0	96.0	128.0	106.7
32	.0	128.0	256.0	128.0	128.0	128.0
48	.0	192.0	384.0	144.0	153.6	137.1
64	128.0	256.0	128.0	153.6	170.7	128.0

K = 300

M \ N	50	100	200	300	400	500
2	.0	12.0	.0	36.0	.0	.0
16	.0	48.0	192.0	96.0	192.0	160.0
32	.0	192.0	128.0	115.2	153.6	160.0
48	144.0	144.0	96.0	172.8	164.6	144.0
64	.0	128.0	153.6	144.0	128.0	147.7

K = 400

M \ N	50	100	200	300	400	500
2	.0	.0	32.0	.0	64.0	80.0
16	64.0	128.0	256.0	128.0	170.7	128.0
32	128.0	85.3	102.4	192.0	128.0	142.2
48	96.0	96.0	128.0	144.0	139.6	147.7
64	128.0	170.7	128.0	128.0	120.5	150.6

K = 500

M \ N	50	100	200	300	400	500
2	.0	.0	.0	60.0	80.0	50.0
16	80.0	80.0	80.0	160.0	213.3	160.0
32	160.0	160.0	106.7	120.0	128.0	145.5
48	80.0	160.0	137.1	160.0	147.7	150.0
64	106.7	128.0	160.0	128.0	121.9	145.5

DGEMM with TRANSA = 'T', TRANSB = 'T'

K = 50

M \ N	50	100	200	300	400	500
2	.0	.0	4.0	.0	.0	10.0
16	.0	16.0	.0	.0	64.0	80.0
32	16.0	.0	64.0	.0	128.0	80.0
48	.0	48.0	96.0	144.0	96.0	80.0
64	.0	64.0	64.0	96.0	85.3	80.0

K = 100

M \ N	50	100	200	300	400	500
2	.0	.0	8.0	12.0	16.0	20.0
16	.0	32.0	64.0	48.0	64.0	80.0
32	.0	.0	128.0	96.0	85.3	80.0
48	.0	96.0	64.0	96.0	96.0	96.0
64	64.0	64.0	85.3	96.0	102.4	91.4

K = 200

M \ N	50	100	200	300	400	500
2	.0	.0	16.0	24.0	16.0	20.0
16	.0	.0	64.0	64.0	64.0	80.0
32	.0	64.0	85.3	96.0	85.3	80.0
48	96.0	96.0	96.0	96.0	85.3	96.0
64	64.0	85.3	85.3	96.0	85.3	98.5

K = 300

M \ N	50	100	200	300	400	500
2	.0	.0	24.0	18.0	24.0	30.0
16	48.0	96.0	64.0	72.0	76.8	80.0
32	96.0	96.0	76.8	96.0	85.3	87.3
48	72.0	144.0	96.0	86.4	104.7	96.0
64	96.0	76.8	96.0	96.0	96.0	96.0

K = 400

M \ N	50	100	200	300	400	500
2	.0	16.0	32.0	24.0	21.3	20.0
16	64.0	64.0	64.0	76.8	73.1	71.1
32	128.0	85.3	85.3	85.3	85.3	91.4
48	96.0	128.0	76.8	96.0	90.4	96.0
64	64.0	102.4	93.1	90.4	97.5	102.4

DGEMM with TRANSA = 'T', TRANSB = 'T'

K = 50

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	48.0	64.0	80.0
32	16.0	.0	64.0	96.0	128.0	160.0
48	12.0	.0	96.0	144.0	192.0	120.0
64	.0	64.0	64.0	192.0	128.0	320.0

K = 100

M \ N	50	100	200	300	400	500
2	.0	.0	8.0	.0	.0	20.0
16	.0	.0	64.0	96.0	128.0	160.0
32	.0	64.0	.0	64.0	128.0	160.0
48	48.0	96.0	64.0	72.0	128.0	160.0
64	.0	128.0	256.0	96.0	128.0	160.0

K = 200

M \ N	50	100	200	300	400	500
2	.0	.0	.0	24.0	32.0	20.0
16	.0	.0	128.0	96.0	85.3	80.0
32	.0	128.0	85.3	128.0	102.4	106.7
48	96.0	96.0	192.0	144.0	128.0	120.0
64	128.0	128.0	102.4	128.0	128.0	128.0

K = 300

M \ N	50	100	200	300	400	500
2	6.0	.0	24.0	36.0	24.0	20.0
16	48.0	96.0	96.0	96.0	96.0	80.0
32	96.0	96.0	96.0	96.0	128.0	106.7
48	144.0	144.0	144.0	123.4	128.0	130.9
64	.0	128.0	109.7	128.0	128.0	137.1

K = 400

M \ N	50	100	200	300	400	500
2	8.0	16.0	16.0	24.0	21.3	20.0
16	64.0	64.0	85.3	96.0	85.3	91.4
32	64.0	85.3	102.4	109.7	128.0	116.4
48	96.0	192.0	109.7	115.2	139.6	128.0
64	128.0	170.7	128.0	128.0	120.5	128.0

K = 500

M \ N	50	100	200	300	400	500
2	10.0	20.0	40.0	20.0	20.0	20.0
16	80.0	80.0	64.0	68.6	71.1	80.0
32	80.0	80.0	80.0	87.3	75.3	76.2
48	80.0	96.0	87.3	84.7	96.0	104.3
64	80.0	91.4	106.7	91.4	88.3	91.4

*** Speed of DSYMM in megaflops ***
with LDA = 513

DSYMM with SIDE = 'L', UPLO = 'U'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	15.4	.0	.0
32	.0	.0	41.0	61.4	81.9	102.4
48	.0	.0	92.2	138.2	92.2	76.8
64	.0	81.9	54.6	122.9	109.2	81.9

DSYMM with SIDE = 'L', UPLO = 'L'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	20.5	25.6
32	.0	.0	.0	61.4	81.9	102.4
48	23.0	.0	92.2	138.2	92.2	76.8
64	.0	81.9	81.9	81.9	109.2	102.4

DSYMM with SIDE = 'R', UPLO = 'U'

M \ N	50	100	200	300	400	500
2	1.0	.0	.0	12.0	32.0	20.0
16	.0	32.0	64.0	57.6	73.1	66.7
32	.0	64.0	85.3	82.3	64.0	72.7
48	24.0	48.0	96.0	78.5	85.3	88.9
64	32.0	42.7	73.1	76.8	85.3	86.5

DSYMM with SIDE = 'R', UPLO = 'L'

M \ N	50	100	200	300	400	500
2	.0	.0	16.0	18.0	21.3	25.0
16	.0	32.0	64.0	57.6	73.1	72.7
32	.0	64.0	64.0	72.0	85.3	80.0

K = 500

M \ N	50	100	200	300	400	500
2	10.0	20.0	20.0	30.0	20.0	25.0
16	80.0	160.0	80.0	96.0	106.7	88.9
32	80.0	106.7	128.0	106.7	106.7	114.3
48	120.0	160.0	106.7	120.0	128.0	120.0
64	106.7	128.0	128.0	137.1	121.9	123.1

*** Speed of DSYMM in megaflops ***
with LDA = 513

DSYMM with SIDE = 'L', UPLO = 'U'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.4
16	.0	.0	.0	.0	.0	.0
32	.0	20.5	.0	61.4	81.9	102.4
48	.0	46.1	.0	138.2	184.3	230.4
64	41.0	.0	81.9	122.9	163.8	136.5

DSYMM with SIDE = 'L', UPLO = 'L'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	20.5	.0
32	10.2	.0	.0	.0	81.9	.0
48	23.0	.0	92.2	138.2	92.2	115.2
64	41.0	81.9	163.8	245.8	109.2	136.5

DSYMM with SIDE = 'R', UPLO = 'U'

M \ N	50	100	200	300	400	500
2	1.0	.0	8.0	36.0	32.0	20.0
16	.0	.0	128.0	96.0	85.3	114.3
32	.0	32.0	128.0	115.2	113.8	100.0
48	.0	96.0	76.8	108.0	109.7	109.1
64	.0	128.0	170.7	192.0	120.5	133.3

DSYMM with SIDE = 'R', UPLO = 'L'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	36.0	32.0	33.3
16	.0	32.0	64.0	96.0	102.4	100.0
32	.0	64.0	85.3	115.2	128.0	106.7

48	24.0	96.0	96.0	86.4	85.3	88.9
64	.0	64.0	64.0	88.6	85.3	94.1

*** Speed of DTRMM in megaflops ***
with LDA = 513

DTRMM with SIDE = 'L', UPLO = 'U', TRANS = 'N'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.2
16	.0	.0	.0	.0	.0	.0
32	5.1	.0	.0	30.7	.0	51.2
48	.0	.0	46.1	69.1	46.1	115.2
64	20.5	.0	.0	122.9	163.8	102.4

DTRMM with SIDE = 'L', UPLO = 'U', TRANS = 'T'

M \ N	50	100	200	300	400	500
2	.0	.0	.1	.0	.0	.0
16	.0	2.6	.0	.0	.0	.0
32	.0	.0	20.5	.0	.0	.0
48	11.5	.0	46.1	69.1	92.2	115.2
64	.0	41.0	81.9	61.4	81.9	102.4

DTRMM with SIDE = 'L', UPLO = 'L', TRANS = 'N'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0
32	.0	10.2	.0	30.7	41.0	51.2
48	.0	.0	46.1	69.1	46.1	115.2
64	20.5	.0	81.9	122.9	54.6	68.3

DTRMM with SIDE = 'L', UPLO = 'L', TRANS = 'T'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	10.2	.0
32	.0	10.2	.0	.0	.0	.0
48	11.5	.0	46.1	69.1	92.2	115.2
64	.0	41.0	81.9	61.4	81.9	102.4

DTRMM with SIDE = 'R', UPLO = 'U', TRANS = 'N'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	18.0	32.0	25.0

48	.0	96.0	128.0	144.0	118.2	126.3
64	.0	64.0	128.0	128.0	128.0	139.1

*** Speed of DTRMM in megaflops ***
with LDA = 513

DTRMM with SIDE = 'L', UPLO = 'U', TRANS = 'N'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	5.1	.0	.0	.0
32	5.1	.0	.0	.0	.0	51.2
48	.0	.0	46.1	.0	.0	115.2
64	.0	.0	81.9	122.9	163.8	102.4

DTRMM with SIDE = 'L', UPLO = 'U', TRANS = 'T'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	10.2	.0
32	.0	.0	.0	.0	.0	.0
48	.0	23.0	.0	69.1	92.2	115.2
64	.0	41.0	.0	.0	163.8	102.4

DTRMM with SIDE = 'L', UPLO = 'L', TRANS = 'N'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	7.7	.0	.0
32	.0	.0	20.5	.0	41.0	.0
48	.0	.0	.0	69.1	92.2	115.2
64	.0	.0	81.9	122.9	81.9	204.8

DTRMM with SIDE = 'L', UPLO = 'L', TRANS = 'T'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0
16	.0	2.6	.0	.0	.0	.0
32	.0	.0	.0	30.7	.0	51.2
48	.0	.0	46.1	.0	.0	115.2
64	.0	.0	81.9	122.9	163.8	102.4

DTRMM with SIDE = 'R', UPLO = 'U', TRANS = 'N'

M \ N	50	100	200	300	400	500
2	.0	.0	.0	.0	.0	.0