SMM C/P   1986 DOY194   280 +/-   0 degrees

height = h + velocity*time   # data points =   9

Top of Loop

S=SMM   M=MK3   P=PMON

SMM & MK3 - CORRECTED TIMES

height [solar radii]

6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00

2:00   2:30   3:00   3:30   4:00   4:30   5:00
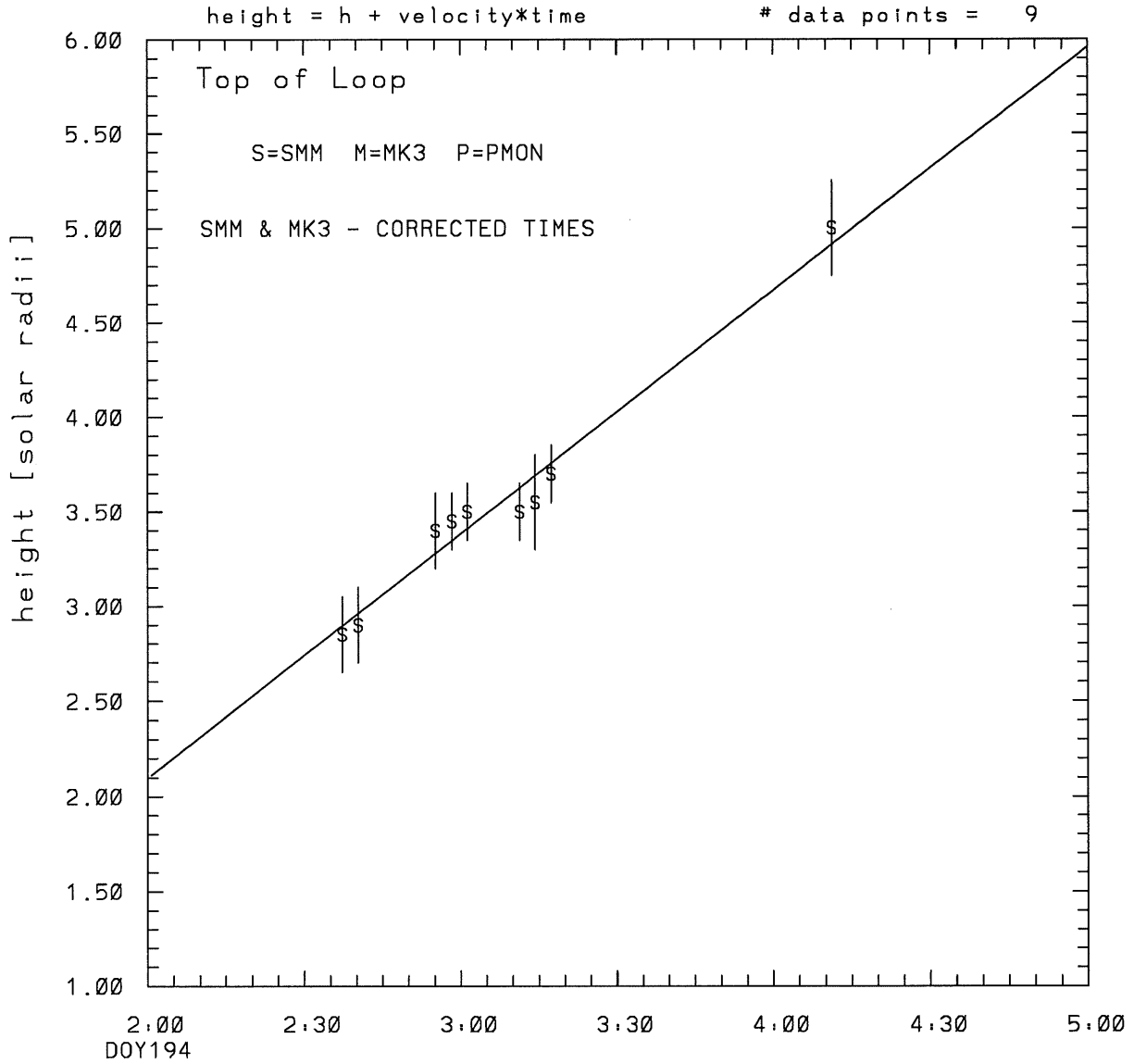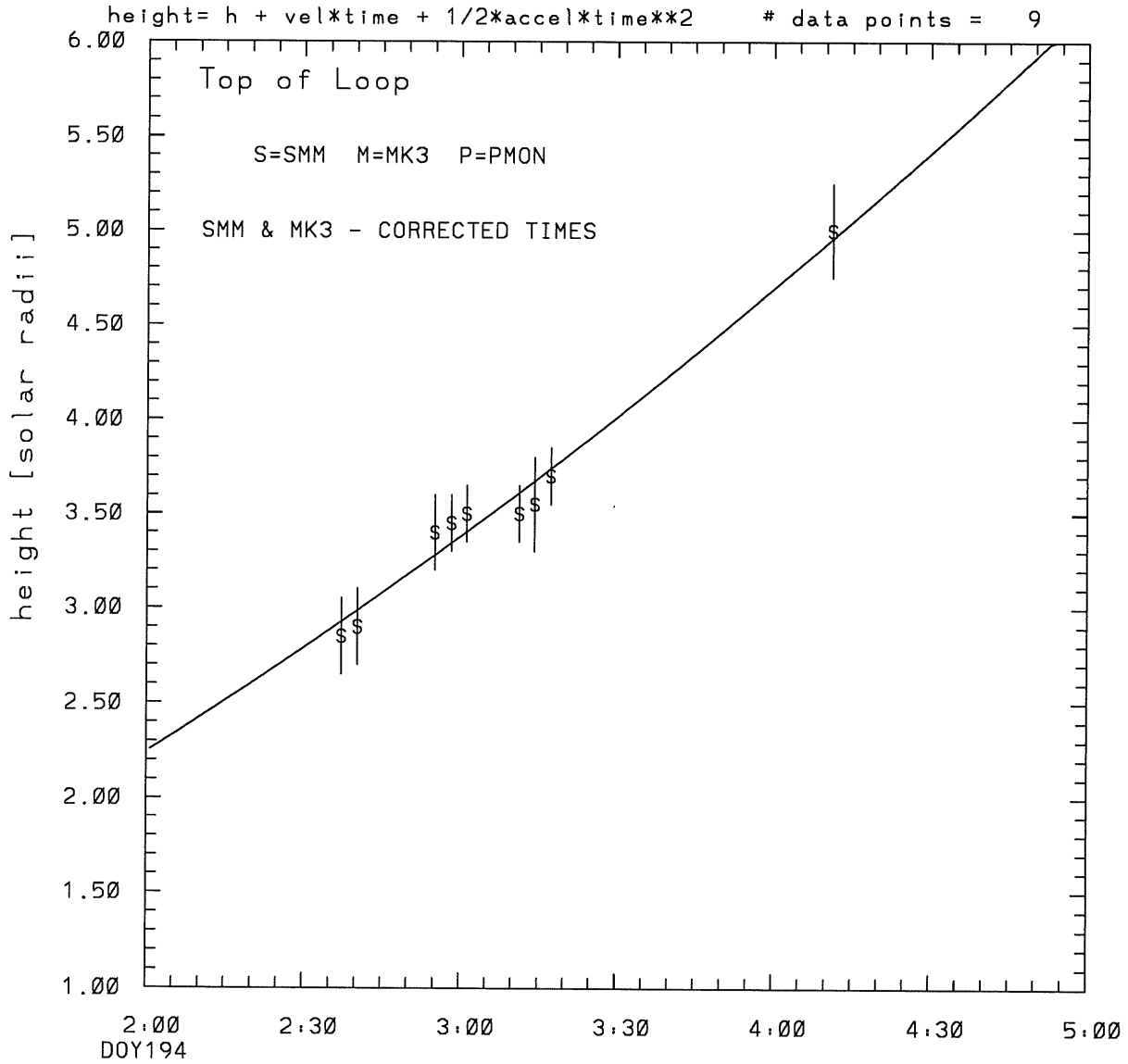DOY194

tstart=DOY194 1: 9 +/-   1.0 [min.]
radial velocity= 249. +/-   19. [km/sec]

SMM C/P   1986 DOY194   280 +/-   0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   9

Top of Loop

S=SMM   M=MK3   P=PMON

SMM & MK3 - CORRECTED TIMES

height [solar radii]

6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00

2:00   2:30   3:00   3:30   4:00   4:30   5:00
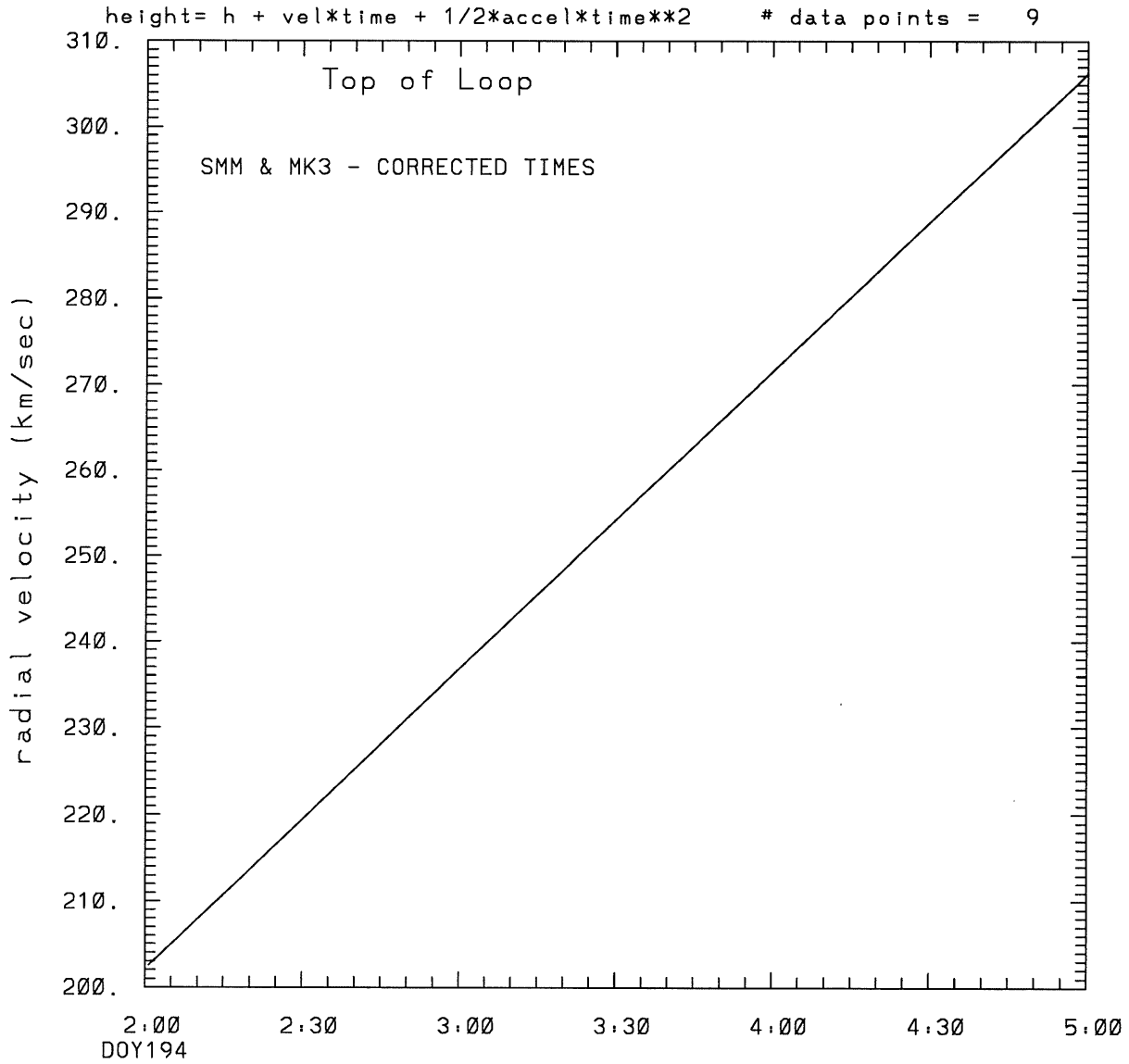DOY194

tstart=DOY194   0:41 +/-   34.0 [min.]

radial acceleration=   0.0096 +/-   0.0182 [km/sec**2]

SMM C/P   1986 DOY194   280 +/-   0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   9

Top of Loop

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

310.
300.
290.
280.
270.
260.
250.
240.
230.
220.
210.
200.

2:00   2:30   3:00   3:30   4:00   4:30   5:00
DOY194

tstart=DOY194   0:41 +/-   34.0 [min.]

radial acceleration=0.964E-02 km/sec**2

```
*********************
 This is a 1 order run
*********************


*******
 INPUT:
*******
```

			error in		error in	
year doy	time	radii	radius	angle	angle	datatype
1986 194	2:37:18	2.85	+/- 0.20	280.0	+/- 0.5	SMM
1986 194	2:40:20	2.90	+/- 0.20	280.0	+/- 0.5	SMM
1986 194	2:55: 8	3.40	+/- 0.20	280.0	+/- 1.0	SMM
1986 194	2:58:17	3.45	+/- 0.15	280.0	+/- 1.0	SMM
1986 194	3: 1:14	3.50	+/- 0.15	280.0	+/- 1.0	SMM
1986 194	3:11:18	3.50	+/- 0.15	280.0	+/- 1.0	SMM
1986 194	3:14:18	3.55	+/- 0.25	280.0	+/- 1.0	SMM
1986 194	3:17:20	3.70	+/- 0.15	280.0	+/- 1.0	SMM
1986 194	4:11:17	5.00	+/- 0.25	280.0	+/- 1.0	SMM

```
******************************************
 Structure being measured:
 Top of Loop
******************************************


********
 OUTPUT:
********


START TIME:


Event began at t = 0 + -0.511E+02 +/-  0.102E+01 [minutes]
In more convenient units:
Event began at DOY 194  1: 9 +/-  0.102E+01 [minutes]


Origin defined at DOY194  2: 0

RADIAL INFORMATION:

RADIAL VELOCITY =   249. +/-    19. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =   0.210E+01 +/-   0.113E+00 [solar radii]
c(2) =   0.215E-01 +/-   0.166E-02 [radii/min]
c(2) =   0.249E+03 +/-   0.192E+02 [km/sec]
c(3) =   0.000E+00 +/-   0.000E+00 [radii/min**2]
c(3) =   0.000E+00 +/-   0.000E+00 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

          error in c(1)=  0.10187E+00 [radii] see Bevington pg. 114
          error in c(2)=  0.14093E-02 [radii/min] see Bevington pg. 114
```

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/-   0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 280. +/-   0. [degrees]
a(2) =   0.000E+00 +/-   0.000E+00 [degrees/min]
a(2) =   0.000E+00 +/-   0.000E+00 [rad/sec]
a(3) =   0.000E+00 +/-   0.000E+00 [degrees/min**2]
a(3) =   0.000E+00 +/-   0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 2:37 = 0.000E+00 km/sec
The TOTAL velocity at 2:37 = 249. km/sec

The TANGENTIAL velocity at 2:40 = 0.000E+00 km/sec
The TOTAL velocity at 2:40 = 249. km/sec

The TANGENTIAL velocity at 2:55 = 0.000E+00 km/sec
The TOTAL velocity at 2:55 = 249. km/sec

The TANGENTIAL velocity at 2:58 = 0.000E+00 km/sec
The TOTAL velocity at 2:58 = 249. km/sec

The TANGENTIAL velocity at 3: 1 = 0.000E+00 km/sec
The TOTAL velocity at 3: 1 = 249. km/sec

The TANGENTIAL velocity at 3:11 = 0.000E+00 km/sec
The TOTAL velocity at 3:11 = 249. km/sec

The TANGENTIAL velocity at 3:14 = 0.000E+00 km/sec
The TOTAL velocity at 3:14 = 249. km/sec

The TANGENTIAL velocity at 3:17 = 0.000E+00 km/sec
The TOTAL velocity at 3:17 = 249. km/sec

The TANGENTIAL velocity at 4:11 = 0.000E+00 km/sec
The TOTAL velocity at 4:11 = 249. km/sec

****
The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

Standard Deviation in the height = 0.62
Standard Deviation in start time measurement =   0.261E+02
Error in time =   0.13631E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.104E-01
Reduced Chi Squared = 0.661E-01
Chi Squared = 0.463E+00
The probability for exceeding chi square = 0.100E+01

The correlation coefficient =   0.986E+00
The probability that no LINEAR correlation exists between the variables =   0.9644E-06
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

```
********************
This is a 2 order run
********************


*******
INPUT:
*******
```

year doy	time	radii	error in radius	angle	error in angle	datatype
1986 194	2:37:18	2.85 +/-	0.20	280.0 +/-	0.5	SMM
1986 194	2:40:20	2.90 +/-	0.20	280.0 +/-	0.5	SMM
1986 194	2:55: 8	3.40 +/-	0.20	280.0 +/-	1.0	SMM
1986 194	2:58:17	3.45 +/-	0.15	280.0 +/-	1.0	SMM
1986 194	3: 1:14	3.50 +/-	0.15	280.0 +/-	1.0	SMM
1986 194	3:11:18	3.50 +/-	0.15	280.0 +/-	1.0	SMM
1986 194	3:14:18	3.55 +/-	0.25	280.0 +/-	1.0	SMM
1986 194	3:17:20	3.70 +/-	0.15	280.0 +/-	1.0	SMM
1986 194	4:11:17	5.00 +/-	0.25	280.0 +/-	1.0	SMM

```
*****************************************
 Structure being measured:
Top of Loop
*****************************************


********
OUTPUT:
********


START TIME:

Event began at t = 0 + -0.806E+02 +/-  0.340E+02 [minutes]
In more convenient units:
Event began at DOY 194  0:41 +/-  0.340E+02 [minutes]

Origin defined at DOY194  2: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  0.964E-02 +/-  0.182E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:
```

c(1) =   0.224E+01 +/-   0.301E+00 [solar radii]
c(2) =   0.174E-01 +/-   0.782E-02 [radii/min]
c(2) =   0.202E+03 +/-   0.907E+02 [km/sec]
c(3) =   0.249E-04 +/-   0.471E-04 [radii/min**2]
c(3) =   0.964E-02 +/-   0.182E-01 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

   Approximate error in c(1) = 0.29910E+00 [radii] Bevington pg 154 (8-30)
        Exact error in c(1) = 0.75631E-01 [radii] Bevington pg 154 (8-28)

Approximate error in c(2) = 0.77931E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.18525E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.45204E-04 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.10123E-04 [radii/min**] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/- 0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 280. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 2:37 = 0.000E+00 km/sec
The TOTAL velocity at 2:37 = 224. km/sec

The TANGENTIAL velocity at 2:40 = 0.000E+00 km/sec
The TOTAL velocity at 2:40 = 225. km/sec

The TANGENTIAL velocity at 2:55 = 0.000E+00 km/sec
The TOTAL velocity at 2:55 = 234. km/sec

The TANGENTIAL velocity at 2:58 = 0.000E+00 km/sec
The TOTAL velocity at 2:58 = 236. km/sec

The TANGENTIAL velocity at 3: 1 = 0.000E+00 km/sec
The TOTAL velocity at 3: 1 = 238. km/sec

The TANGENTIAL velocity at 3:11 = 0.000E+00 km/sec
The TOTAL velocity at 3:11 = 243. km/sec

The TANGENTIAL velocity at 3:14 = 0.000E+00 km/sec
The TOTAL velocity at 3:14 = 245. km/sec

The TANGENTIAL velocity at 3:17 = 0.000E+00 km/sec
The TOTAL velocity at 3:17 = 247. km/sec

The TANGENTIAL velocity at 4:11 = 0.000E+00 km/sec
The TOTAL velocity at 4:11 = 278. km/sec

****
The following info is for estimating goodness of the fit
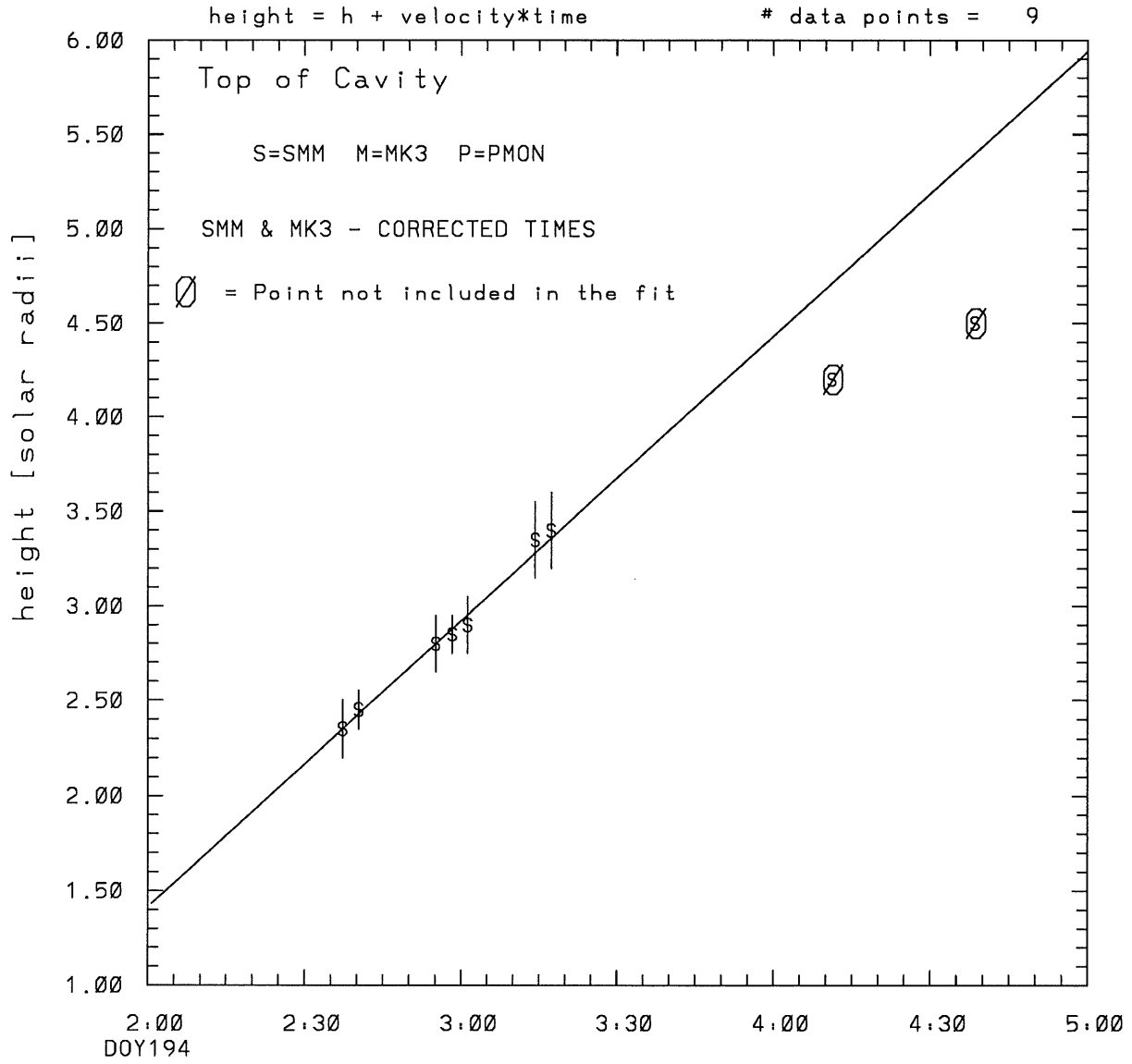***

Fit is ok [ier=1]

Standard Deviation in the height = 0.62
Standard Deviation in start time measurement =   0.261E+02
Value of reduced Chi Squared returned from nllst2 = 0.114E-01
Reduced Chi Squared = 0.614E-01
Chi Squared = 0.368E+00
The probability for exceeding chi square = 0.100E+01

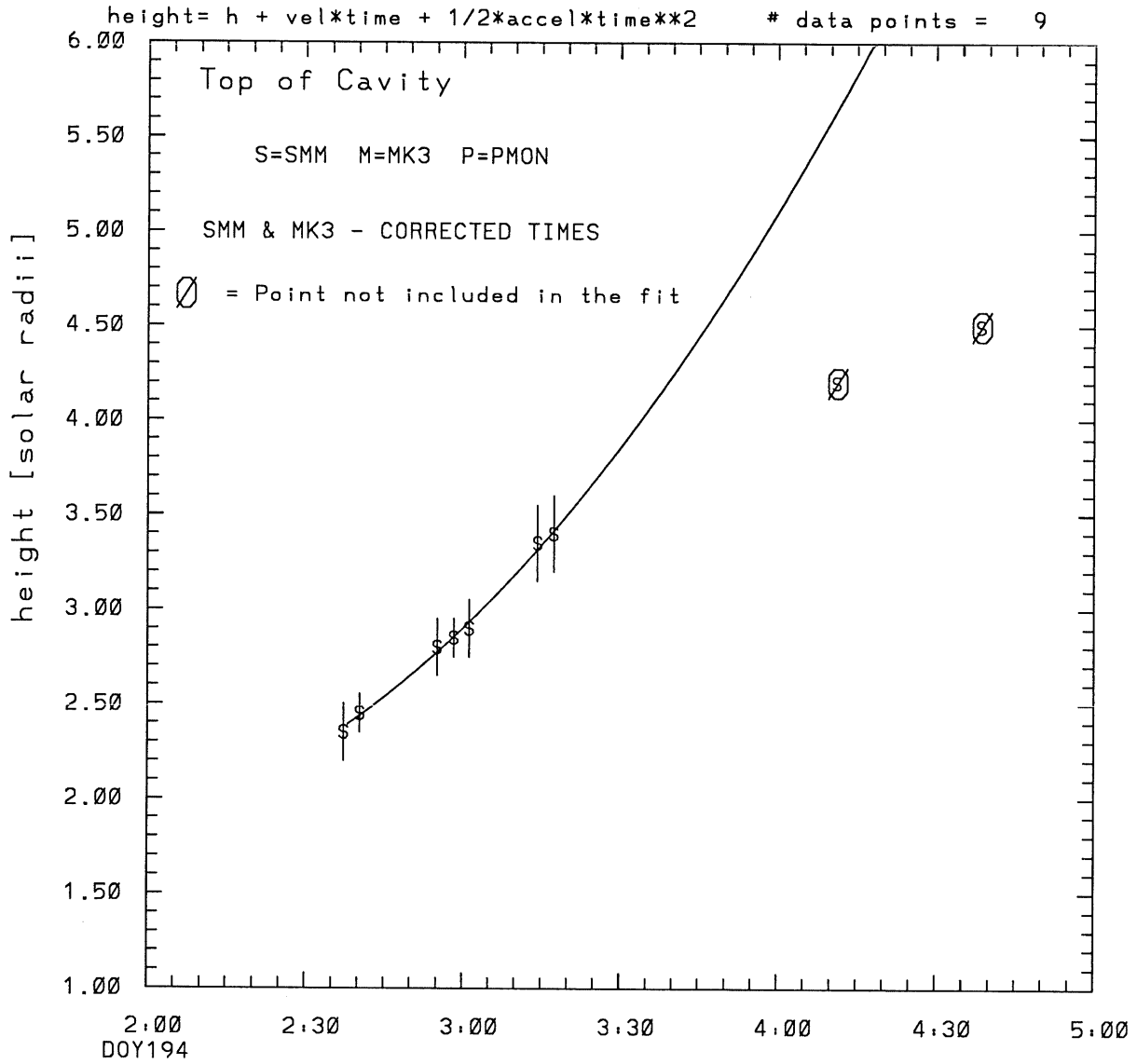For a second order fit 3 correlation coefficients are given:
 (Using equation of motion: r = a + bt + at**2)
The correlation between the data and the term linear in time =   0.7711E+00
The correlation between the data and the time**2 term =   0.7355E+00
The correlation between the data and the complete equation of motion =   0.9585E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

SMM C/P 1986 DOY194 280 +/- Ø degrees

height = h + velocity*time   # data points =   9

height [solar radii]

Top of Cavity

S=SMM   M=MK3   P=PMON

SMM & MK3 - CORRECTED TIMES

Ø = Point not included in the fit

DOY194

tstart=DOY194   1:44 +/-   Ø.Ø [min.]
radial velocity=   292. +/-   11. [km/sec]

SMM C/P 1986 DOY194 280 +/- Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   9

height [solar radii]

6.00

Top of Cavity

5.50

S=SMM M=MK3 P=PMON

5.00

SMM & MK3 - CORRECTED TIMES

Ø = Point not included in the fit

4.50

4.00

3.50

3.00

2.50

2.00

1.50

1.00

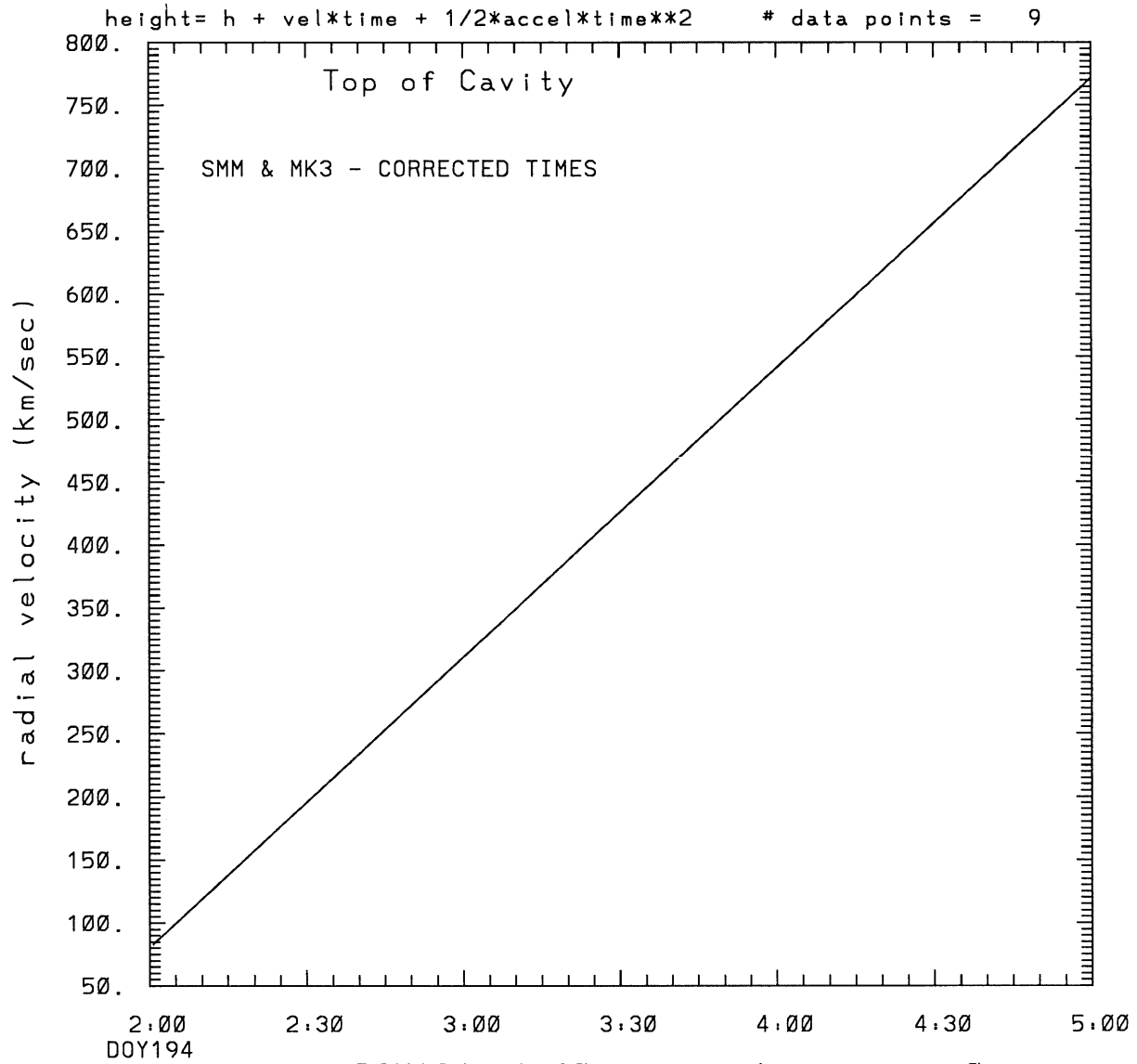2:00   2:30   3:00   3:30   4:00   4:30   5:00
DOY194

tstart=DOY194 1:40   from derivative=Ø
Event begins at   1.82 Solar Radii
radial acceleration= 0.0640 +/- 0.0193 [km/sec**2]

SMM C/P   1986 DOY194   280 +/-   0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   9

Top of Cavity

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

800.
750.
700.
650.
600.
550.
500.
450.
400.
350.
300.
250.
200.
150.
100.
50.

2:00   2:30   3:00   3:30   4:00   4:30   5:00
DOY194

tstart=DOY194   1:40   from derivative=0
Event begins at   1.82 Solar Radii
radial acceleration=0.640E-01   km/sec**2

```
********************
This is a 1 order run
********************


*******
INPUT:
*******


                     error in      error in
year doy   time   radii  radius   angle  angle   datatype
1986 194  2:37:18  2.35 +/- 0.15  280.0 +/- 0.5    SMM
1986 194  2:40:20  2.45 +/- 0.10  280.0 +/- 0.5    SMM
1986 194  2:55: 8  2.80 +/- 0.15  280.0 +/- 0.5    SMM
1986 194  2:58:17  2.85 +/- 0.10  280.0 +/- 0.5    SMM
1986 194  3: 1:14  2.90 +/- 0.15  280.0 +/- 0.5    SMM
1986 194  3:14:18  3.35 +/- 0.20  280.0 +/- 1.0    SMM
1986 194  3:17:20  3.40 +/- 0.20  280.0 +/- 1.0    SMM
1986 194  4:11:17  4.20 -----  280.00 +/- ----   SMM  THIS POINT WASN'T USED IN THE FIT.
1986 194  4:38:30  4.50 -----  280.00 +/- ----   SMM  THIS POINT WASN'T USED IN THE FIT.


*******************************************
 Structure being measured:
Top of Cavity
*******************************************


********
OUTPUT:
********


START TIME:

Event began at t = 0 + -0.164E+02 +/- 0.205E-01 [minutes]
In more convenient units:
Event began at DOY 194 1:44 +/- 0.205E-01 [minutes]


Origin defined at DOY194 2: 0

RADIAL INFORMATION:

RADIAL VELOCITY =  292. +/-   11. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =   0.141E+01 +/-   0.517E-01 [solar radii]
c(2) =   0.251E-01 +/-   0.943E-03 [radii/min]
c(2) =   0.292E+03 +/-   0.109E+02 [km/sec]
c(3) =   0.000E+00 +/-   0.000E+00 [radii/min**2]
c(3) =   0.000E+00 +/-   0.000E+00 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

        error in c(1)= 0.29092E+00 [radii] see Bevington pg. 114
        error in c(2)= 0.33702E-02 [radii/min] see Bevington pg. 114
```

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/- 0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 280. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 2:37 = 0.000E+00 km/sec
The TOTAL velocity at 2:37 = 292. km/sec

The TANGENTIAL velocity at 2:40 = 0.000E+00 km/sec
The TOTAL velocity at 2:40 = 292. km/sec

The TANGENTIAL velocity at 2:55 = 0.000E+00 km/sec
The TOTAL velocity at 2:55 = 292. km/sec

The TANGENTIAL velocity at 2:58 = 0.000E+00 km/sec
The TOTAL velocity at 2:58 = 292. km/sec

The TANGENTIAL velocity at 3: 1 = 0.000E+00 km/sec
The TOTAL velocity at 3: 1 = 292. km/sec

The TANGENTIAL velocity at 3:14 = 0.000E+00 km/sec
The TOTAL velocity at 3:14 = 292. km/sec

The TANGENTIAL velocity at 3:17 = 0.000E+00 km/sec
The TOTAL velocity at 3:17 = 292. km/sec

The TANGENTIAL velocity at 4:11 = 0.000E+00 km/sec
The TOTAL velocity at 4:11 = 292. km/sec

The TANGENTIAL velocity at 4:38 = 0.000E+00 km/sec
The TOTAL velocity at 4:38 = 292. km/sec

****
The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

Standard Deviation in the height = 0.74
Standard Deviation in start time measurement = 0.389E+02
Error in time = 0.41348E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.123E-02
Reduced Chi Squared = 0.135E+01
Chi Squared = 0.943E+01
The probability for exceeding chi square = 0.100E+01

The correlation coefficient =   0.985E+00
The probability that no LINEAR correlation exists between the variables =   0.1347E-05
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

```
********************
This is a 2 order run
********************


*******
INPUT:
*******
```

year doy	time	radii	error in radius	angle	error in angle	datatype
1986 194	2:37:18	2.35 +/-	0.15	280.0 +/-	0.5	SMM
1986 194	2:40:20	2.45 +/-	0.10	280.0 +/-	0.5	SMM
1986 194	2:55: 8	2.80 +/-	0.15	280.0 +/-	0.5	SMM
1986 194	2:58:17	2.85 +/-	0.10	280.0 +/-	0.5	SMM
1986 194	3: 1:14	2.90 +/-	0.15	280.0 +/-	0.5	SMM
1986 194	3:14:18	3.35 +/-	0.20	280.0 +/-	1.0	SMM
1986 194	3:17:20	3.40 +/-	0.20	280.0 +/-	1.0	SMM
1986 194	4:11:17	4.20 -----		280.00 +/- ----		SMM THIS POINT WASN'T USED IN THE FIT.
1986 194	4:38:30	4.50 -----		280.00 +/- ----		SMM THIS POINT WASN'T USED IN THE FIT.

```
*****************************************
 Structure being measured:
Top of Cavity
*****************************************


********
OUTPUT:
********


START TIME:

tstart=DOY194  1:40 from derivative = 0
Event begins at   1.82 Solar Radii
 Origin defined at DOY194  2: 0


RADIAL INFORMATION:

RADIAL ACCELERATION =  0.640E-01 +/-  0.193E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =    0.189E+01 +/-    0.148E+00 [solar radii]
c(2) =    0.693E-02 +/-   0.554E-02 [radii/min]
c(2) =    0.804E+02 +/-   0.643E+02 [km/sec]
c(3) =    0.165E-03 +/-   0.500E-04 [radii/min**2]
c(3) =    0.640E-01 +/-   0.193E-01 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

        Approximate error in c(1) =  0.27349E+01 [radii] Bevington pg 154 (8-30)
            Exact error in c(1) =  0.37810E-01 [radii] Bevington pg 154 (8-28)
        Approximate error in c(2) =  0.66938E-01 [radii/min] Bevington pg 154 (8-30)
            Exact error in c(2) =  0.12830E-02 [radii/min] Bevington pg 154 (8-28)
```

Approximate error in c(3) = 0.33769E-03 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.10940E-04 [radii/min**] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/-   0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 280. +/-   0. [degrees]
a(2) =   0.000E+00 +/-   0.000E+00 [degrees/min]
a(2) =   0.000E+00 +/-   0.000E+00 [rad/sec]
a(3) =   0.000E+00 +/-   0.000E+00 [degrees/min**2]
a(3) =   0.000E+00 +/-   0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 2:37 = 0.000E+00 km/sec
The TOTAL velocity at 2:37 = 224. km/sec

The TANGENTIAL velocity at 2:40 = 0.000E+00 km/sec
The TOTAL velocity at 2:40 = 235. km/sec

The TANGENTIAL velocity at 2:55 = 0.000E+00 km/sec
The TOTAL velocity at 2:55 = 292. km/sec

The TANGENTIAL velocity at 2:58 = 0.000E+00 km/sec
The TOTAL velocity at 2:58 = 304. km/sec

The TANGENTIAL velocity at 3: 1 = 0.000E+00 km/sec
The TOTAL velocity at 3: 1 = 315. km/sec

The TANGENTIAL velocity at 3:14 = 0.000E+00 km/sec
The TOTAL velocity at 3:14 = 366. km/sec

The TANGENTIAL velocity at 3:17 = 0.000E+00 km/sec
The TOTAL velocity at 3:17 = 377. km/sec

The TANGENTIAL velocity at 4:11 = 0.000E+00 km/sec
The TOTAL velocity at 4:11 = 584. km/sec

The TANGENTIAL velocity at 4:38 = 0.000E+00 km/sec
The TOTAL velocity at 4:38 = 689. km/sec

****
The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

Standard Deviation in the height = 0.74
Standard Deviation in start time measurement =   0.389E+02

Value of reduced Chi Squared returned from nllst2 = 0.550E-03
Reduced Chi Squared = 0.133E+02
Chi Squared = 0.797E+02
The probability for exceeding chi square = 0.100E+01

For a second order fit 3 correlation coefficients are given:
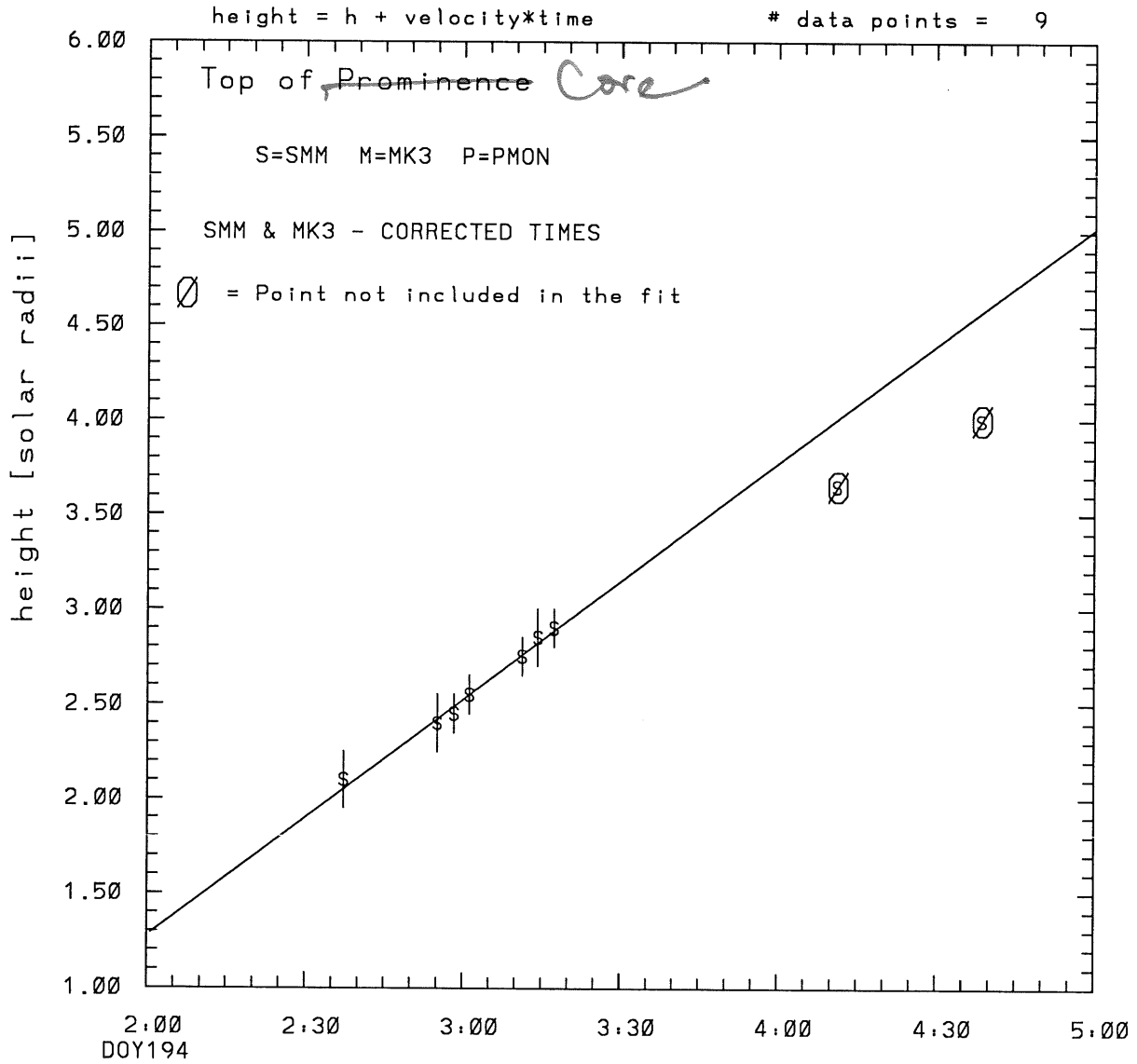 (Using equation of motion: r = a + bt + at**2)
The correlation between the data and the term linear in time =   0.6802E+00
The correlation between the data and the time**2 term =   0.5736E+00
The correlation between the data and the complete equation of motion =   0.1682E+01
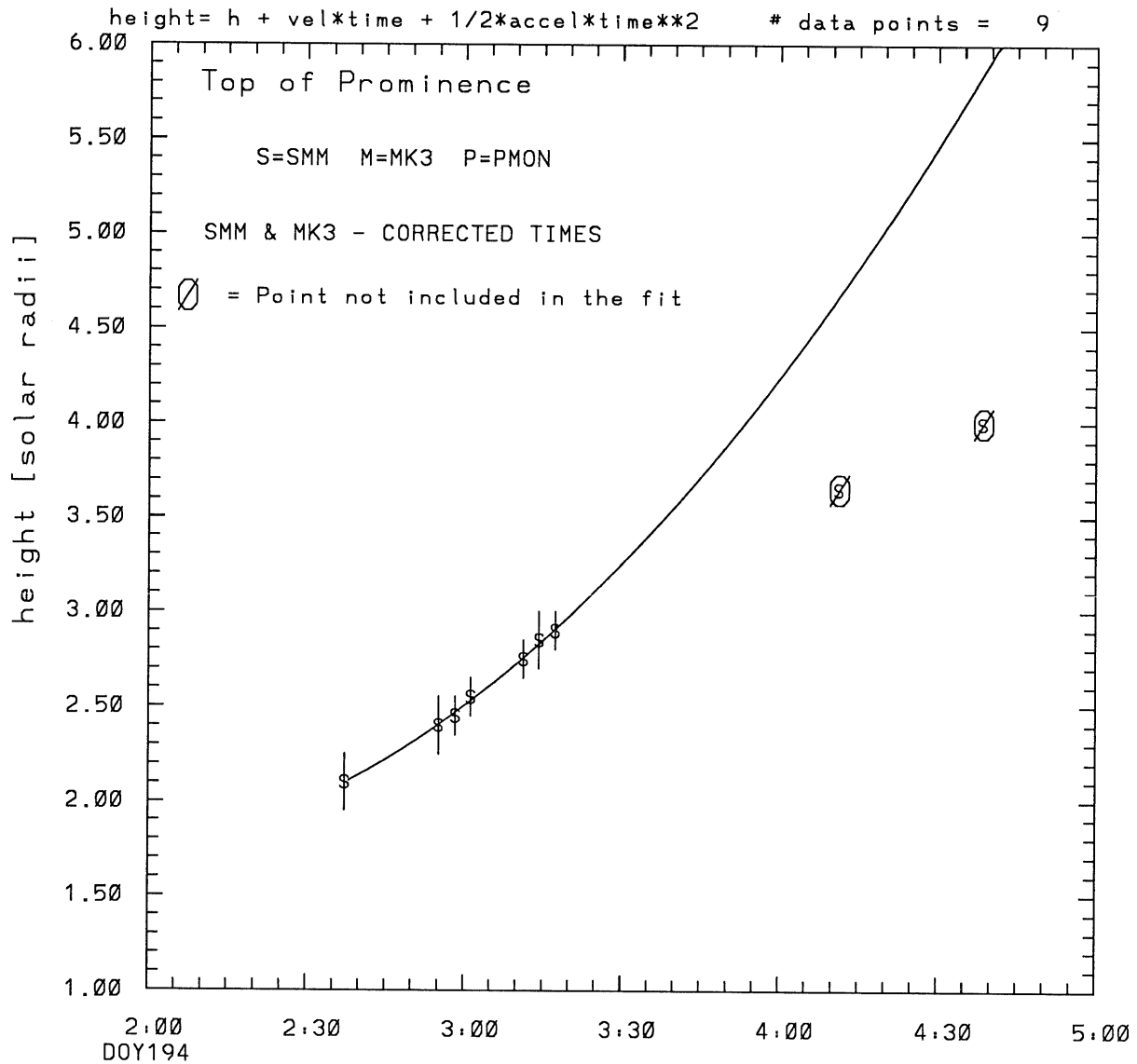SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

SMM C/P   1986 DOY194   280 +/-   0 degrees

height = h + velocity*time   # data points =   9

Top of Prominence *Core*

S=SMM   M=MK3   P=PMON

SMM & MK3 - CORRECTED TIMES

⌀ = Point not included in the fit

height [solar radii] (y-axis, labeled from 1.00 to 6.00)

DOY194 (x-axis, labeled from 2:00 to 5:00)

tstart=DOY194   1:47 +/-   0.2 [min.]
radial velocity=   241. +/-   9. [km/sec]

SMM C/P   1986 DOY194   280 +/-   0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   9

Top of Prominence

    S=SMM   M=MK3   P=PMON

    SMM & MK3 - CORRECTED TIMES

    Ø = Point not included in the fit

height [solar radii]

6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00

2:00   2:30   3:00   3:30   4:00   4:30   5:00
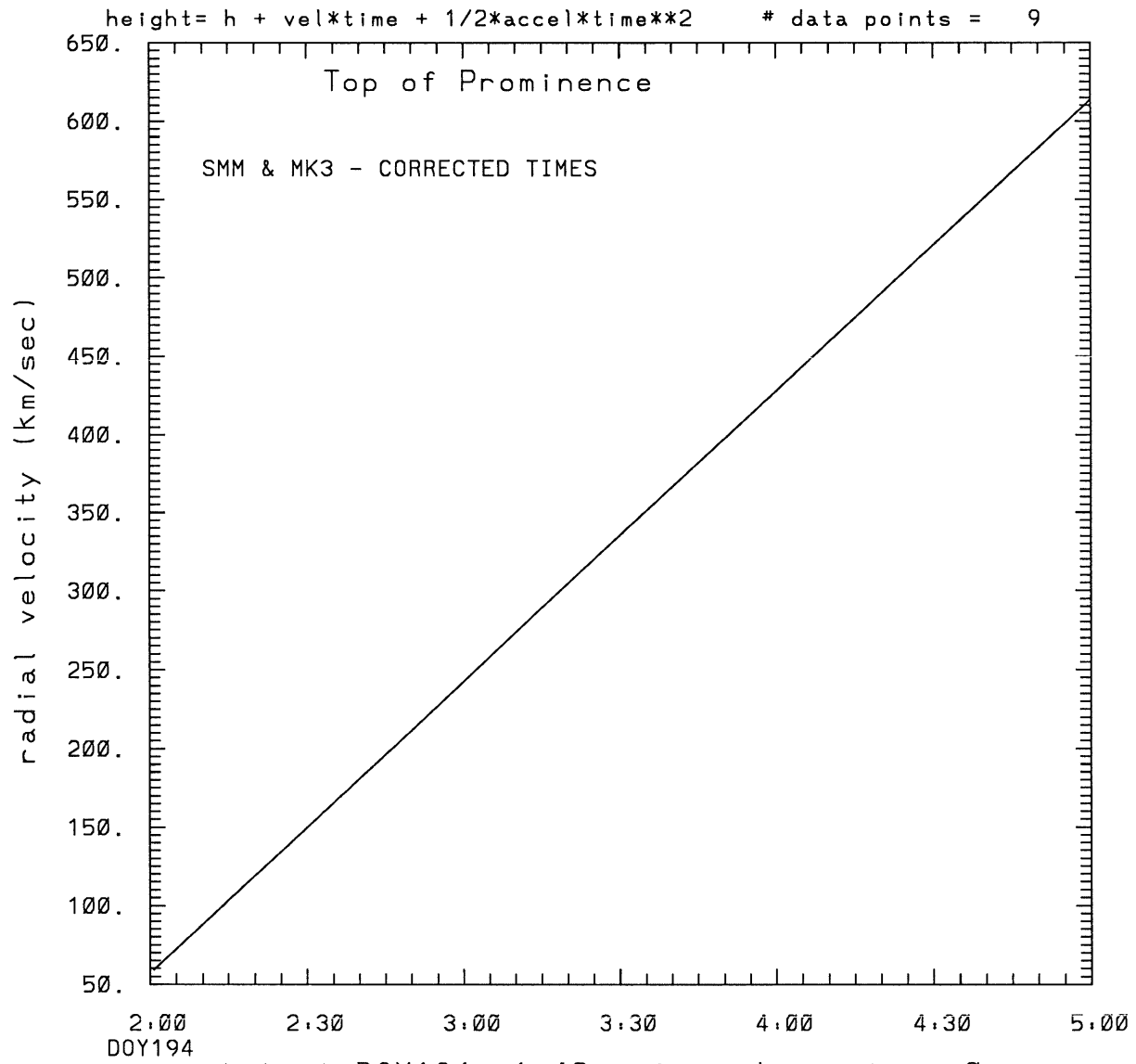DOY194

        tstart=DOY194 1:42   from derivative=0
            Event begins at   1.68 Solar Radii
radial acceleration= 0.0515 +/-   0.0128 [km/sec**2]

SMM C/P 1986 DOY194 280 +/- 0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   9

Top of Prominence

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

650.
600.
550.
500.
450.
400.
350.
300.
250.
200.
150.
100.
50.

2:00   2:30   3:00   3:30   4:00   4:30   5:00
DOY194

tstart=DOY194 1:42   from derivative=0
Event begins at   1.68 Solar Radii
radial acceleration=0.515E-01 km/sec**2

```
*********************
This is a 1 order run
*********************


*******
INPUT:
*******


                   error in        error in
year doy   time   radii radius    angle angle   datatype
1986 194  2:37:18  2.10 +/- 0.15   280.0 +/- 0.5    SMM
1986 194  2:55: 8  2.40 +/- 0.15   280.0 +/- 0.5    SMM
1986 194  2:58:17  2.45 +/- 0.10   280.0 +/- 0.5    SMM
1986 194  3: 1:14  2.55 +/- 0.10   280.0 +/- 0.5    SMM
1986 194  3:11:18  2.75 +/- 0.10   280.0 +/- 0.5    SMM
1986 194  3:14:18  2.85 +/- 0.15   280.0 +/- 0.5    SMM
1986 194  3:17:20  2.90 +/- 0.10   280.0 +/- 0.5    SMM
1986 194  4:11:17  3.65 -----   280.00 +/- ----   SMM  THIS POINT WASN'T USED IN THE FIT.
1986 194  4:38:30  4.00 -----   280.00 +/- ----   SMM  THIS POINT WASN'T USED IN THE FIT.


*******************************************
 Structure being measured:
Top of Prominence
*******************************************


********
OUTPUT:
********


START TIME:

Event began at t = 0 + -0.132E+02 +/-  0.194E+00 [minutes]
In more convenient units:
Event began at DOY 194  1:47 +/-  0.194E+00 [minutes]

Origin defined at DOY194  2: 0

RADIAL INFORMATION:

RADIAL VELOCITY =   241. +/-    9. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =   0.127E+01 +/-   0.519E-01 [solar radii]
c(2) =   0.208E-01 +/-   0.796E-03 [radii/min]
c(2) =   0.241E+03 +/-   0.924E+01 [km/sec]
c(3) =   0.000E+00 +/-   0.000E+00 [radii/min**2]
c(3) =   0.000E+00 +/-   0.000E+00 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

          error in c(1)= 0.20573E+00 [radii] see Bevington pg. 114
          error in c(2)= 0.23242E-02 [radii/min] see Bevington pg. 114
```

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/- 0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 280. +/-   0. [degrees]
a(2) =   0.000E+00 +/-   0.000E+00 [degrees/min]
a(2) =   0.000E+00 +/-   0.000E+00 [rad/sec]
a(3) =   0.000E+00 +/-   0.000E+00 [degrees/min**2]
a(3) =   0.000E+00 +/-   0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 2:37 = 0.000E+00 km/sec
The TOTAL velocity at 2:37 = 241. km/sec

The TANGENTIAL velocity at 2:55 = 0.000E+00 km/sec
The TOTAL velocity at 2:55 = 241. km/sec

The TANGENTIAL velocity at 2:58 = 0.000E+00 km/sec
The TOTAL velocity at 2:58 = 241. km/sec

The TANGENTIAL velocity at 3: 1 = 0.000E+00 km/sec
The TOTAL velocity at 3: 1 = 241. km/sec

The TANGENTIAL velocity at 3:11 = 0.000E+00 km/sec
The TOTAL velocity at 3:11 = 241. km/sec

The TANGENTIAL velocity at 3:14 = 0.000E+00 km/sec
The TOTAL velocity at 3:14 = 241. km/sec

The TANGENTIAL velocity at 3:17 = 0.000E+00 km/sec
The TOTAL velocity at 3:17 = 241. km/sec

The TANGENTIAL velocity at 4:11 = 0.000E+00 km/sec
The TOTAL velocity at 4:11 = 241. km/sec

The TANGENTIAL velocity at 4:38 = 0.000E+00 km/sec
The TOTAL velocity at 4:38 = 241. km/sec

****
 The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

Standard Deviation in the height = 0.61
Standard Deviation in start time measurement =   0.368E+02
Error in time =   0.32595E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.717E-03
Reduced Chi Squared = 0.569E+00
Chi Squared = 0.398E+01
The probability for exceeding chi square = 0.100E+01

The correlation coefficient =   0.994E+00
The probability that no LINEAR correlation exists between the variables =   0.6296E-07
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

```
********************
This is a 2 order run
********************


*******
INPUT:
*******


                    error in        error in
year doy    time    radii  radius   angle  angle   datatype
1986 194  2:37:18   2.10 +/- 0.15   280.0 +/- 0.5     SMM
1986 194  2:55: 8   2.40 +/- 0.15   280.0 +/- 0.5     SMM
1986 194  2:58:17   2.45 +/- 0.10   280.0 +/- 0.5     SMM
1986 194  3: 1:14   2.55 +/- 0.10   280.0 +/- 0.5     SMM
1986 194  3:11:18   2.75 +/- 0.10   280.0 +/- 0.5     SMM
1986 194  3:14:18   2.85 +/- 0.15   280.0 +/- 0.5     SMM
1986 194  3:17:20   2.90 +/- 0.10   280.0 +/- 0.5     SMM
1986 194  4:11:17   3.65 -----   280.00 +/- ----   SMM  THIS POINT WASN'T USED IN THE FIT.
1986 194  4:38:30   4.00 -----   280.00 +/- ----   SMM  THIS POINT WASN'T USED IN THE FIT.


******************************************
Structure being measured:
Top of Prominence
******************************************


********
OUTPUT:
********


START TIME:

tstart=DOY194  1:42 from derivative = 0
Event begins at   1.68 Solar Radii
Origin defined at DOY194  2: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  0.515E-01 +/-  0.128E-01 km/sec**2
```

The computed RADIAL coefficients and errors FROM NLLST2 are:

```
c(1) =   0.173E+01 +/-   0.117E+00 [solar radii]
c(2) =   0.491E-02 +/-   0.396E-02 [radii/min]
c(2) =   0.570E+02 +/-   0.460E+02 [km/sec]
c(3) =   0.133E-03 +/-   0.330E-04 [radii/min**2]
c(3) =   0.515E-01 +/-   0.128E-01 [km/sec**2]
```

The computed ERRORS in coefficients [BEVINGTON] are:

```
        Approximate error in c(1) =  0.22146E+01 [radii] Bevington pg 154 (8-30)
              Exact error in c(1) =  0.15210E-01 [radii] Bevington pg 154 (8-28)
        Approximate error in c(2) =  0.51191E-01 [radii/min] Bevington pg 154 (8-30)
              Exact error in c(2) =  0.59082E-03 [radii/min] Bevington pg 154 (8-28)
```

Approximate error in c(3) = 0.25143E-03 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.52967E-05 [radii/min**] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/-   0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 280. +/-   0. [degrees]
a(2) =   0.000E+00 +/-   0.000E+00 [degrees/min]
a(2) =   0.000E+00 +/-   0.000E+00 [rad/sec]
a(3) =   0.000E+00 +/-   0.000E+00 [degrees/min**2]
a(3) =   0.000E+00 +/-   0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:
The TANGENTIAL velocity at 2:37 = 0.000E+00 km/sec
The TOTAL velocity at 2:37 = 172. km/sec

The TANGENTIAL velocity at 2:55 = 0.000E+00 km/sec
The TOTAL velocity at 2:55 = 227. km/sec

The TANGENTIAL velocity at 2:58 = 0.000E+00 km/sec
The TOTAL velocity at 2:58 = 237. km/sec

The TANGENTIAL velocity at 3: 1 = 0.000E+00 km/sec
The TOTAL velocity at 3: 1 = 246. km/sec

The TANGENTIAL velocity at 3:11 = 0.000E+00 km/sec
The TOTAL velocity at 3:11 = 277. km/sec

The TANGENTIAL velocity at 3:14 = 0.000E+00 km/sec
The TOTAL velocity at 3:14 = 287. km/sec

The TANGENTIAL velocity at 3:17 = 0.000E+00 km/sec
The TOTAL velocity at 3:17 = 296. km/sec

The TANGENTIAL velocity at 4:11 = 0.000E+00 km/sec
The TOTAL velocity at 4:11 = 463. km/sec

The TANGENTIAL velocity at 4:38 = 0.000E+00 km/sec
The TOTAL velocity at 4:38 = 547. km/sec

****
The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

Standard Deviation in the height = 0.61
Standard Deviation in start time measurement =   0.368E+02

Value of reduced Chi Squared returned from nllst2 = 0.246E-03
Reduced Chi Squared = 0.656E+01
Chi Squared = 0.393E+02
The probability for exceeding chi square = 0.100E+01

For a second order fit 3 correlation coefficients are given:
 (Using equation of motion: r = a + bt + at**2)
The correlation between the data and the term linear in time =   0.5298E+00
The correlation between the data and the time**2 term =   0.4687E+00
The correlation between the data and the complete equation of motion =   0.1677E+01
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]