SMM C/P 1989 DOY 55 255 +/- 0 degrees

height = h + velocity*time   # data points = 4

Northern Edge of Cavity (Late in event)

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
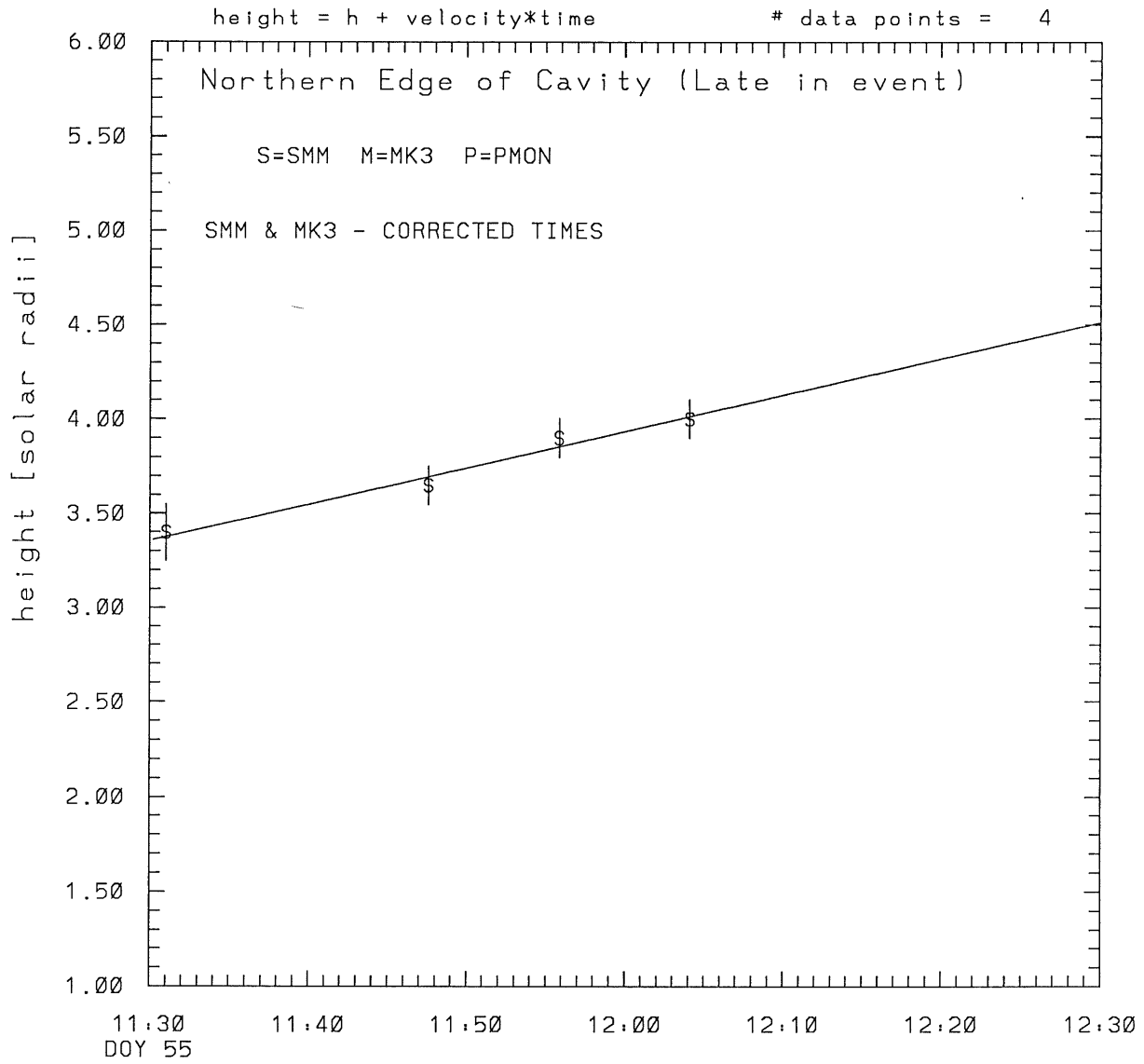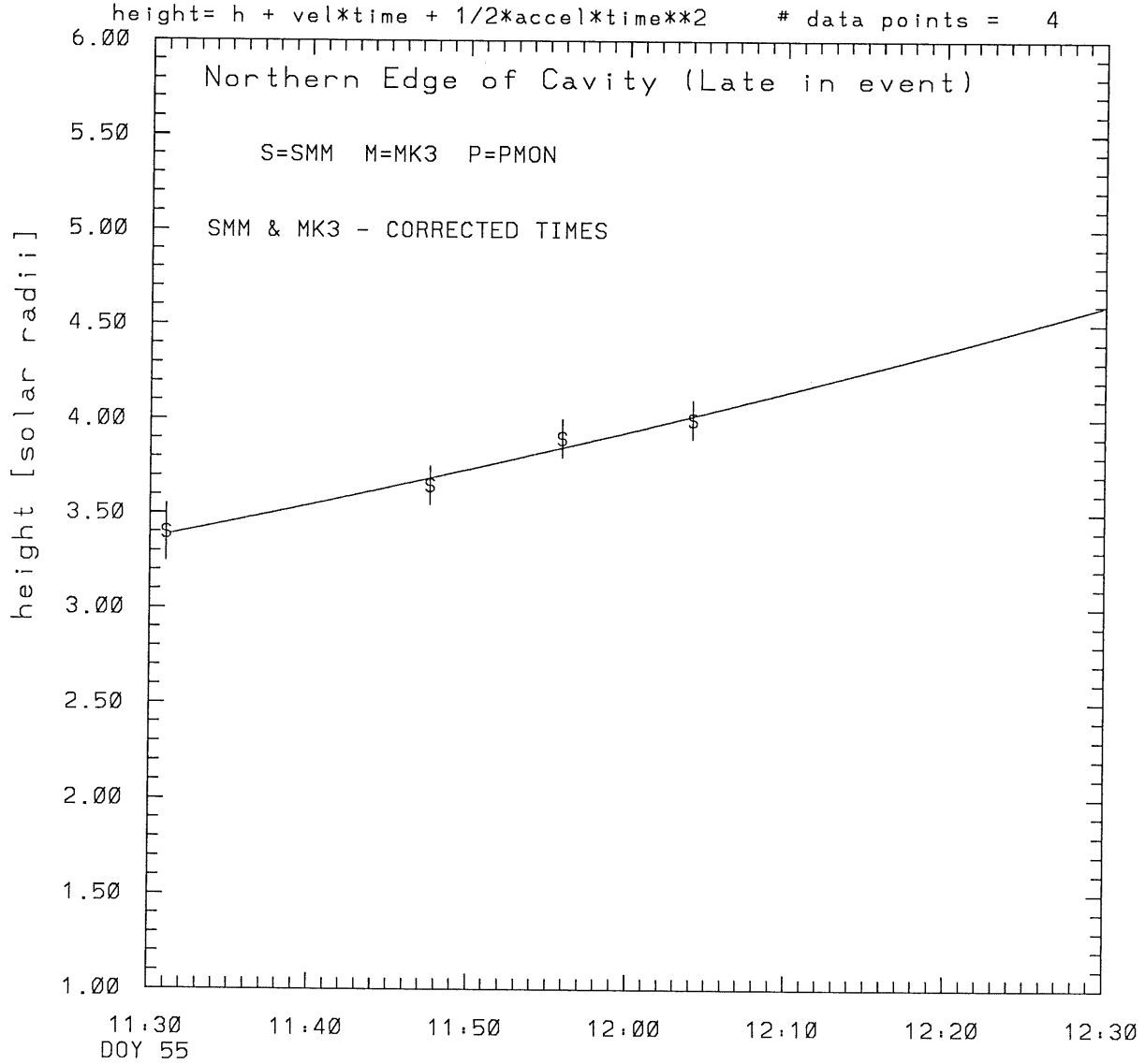3.00
2.50
2.00
1.50
1.00

11:30 11:40 11:50 12:00 12:10 12:20 12:30
DOY 55

tstart=DOY 55 9:28 +/-   3.7 [min.]
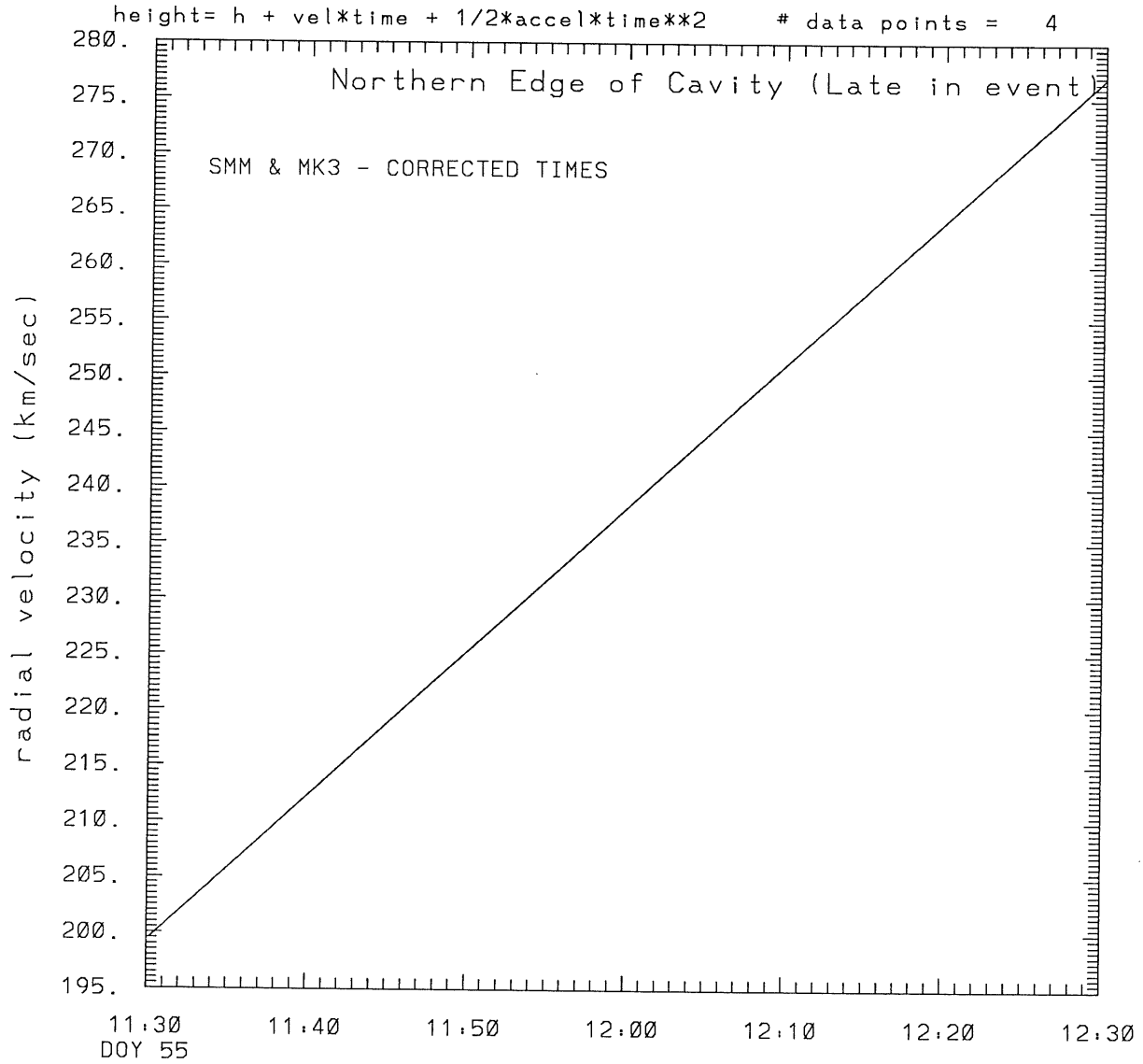radial velocity= 223. +/- 23. [km/sec]

SMM C/P 1989 DOY 55 255 +/- Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points = 4

Northern Edge of Cavity (Late in event)

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

11:30   11:40   11:50   12:00   12:10   12:20   12:30
DOY 55

tstart=DOY 55 8:56   from derivative=Ø
Event begins at   2.04 Solar Radii
radial acceleration= Ø.Ø216 +/- Ø.Ø817 [km/sec**2]
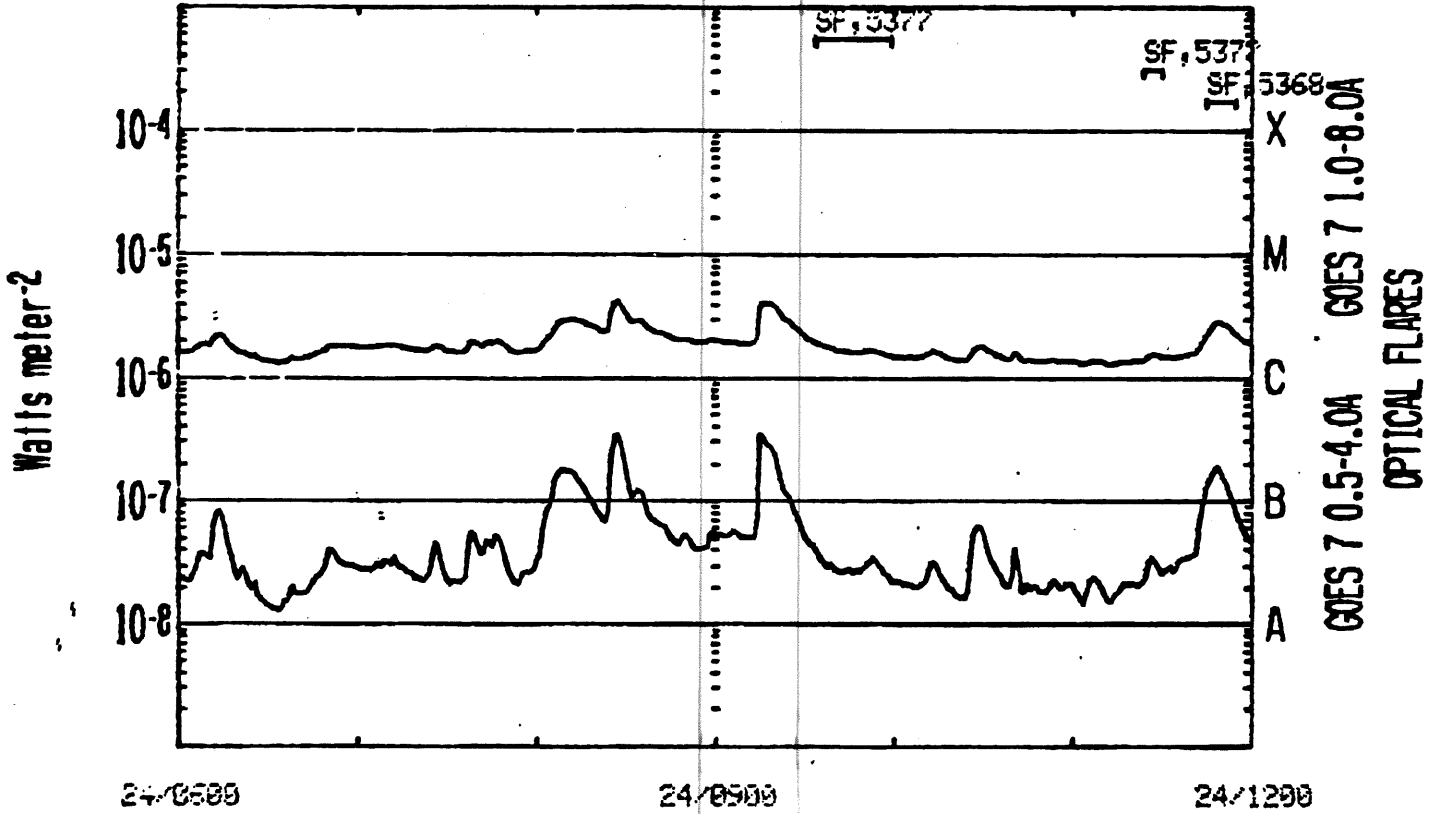
SMM C/P 1989 DOY 55 255 +/- Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   4

Northern Edge of Cavity (Late in event)

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

280.
275.
270.
265.
260.
255.
250.
245.
240.
235.
230.
225.
220.
215.
210.
205.
200.
195.

11:30   11:40   11:50   12:00   12:10   12:20   12:30
DOY 55

tstart=DOY 55 8:56   from derivative=Ø
Event begins at   2.Ø4 Solar Radii
radial acceleration=Ø.216E-Ø1 km/sec**2

1989   Day 055

GOES-7 1 MIN DATA: OPTICAL FLARE DUR, IMP, REGION

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


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

				error in		error in		
year	doy	time	radii	radius	angle	angle	datatype
1989	55	11:31: 2	3.40 +/-	0.15	255.0 +/-	0.5	SMM
1989	55	11:47:35	3.65 +/-	0.10	255.0 +/-	0.5	SMM
1989	55	11:55:52	3.90 +/-	0.10	255.0 +/-	0.5	SMM
1989	55	12: 4: 6	4.00 +/-	0.10	255.0 +/-	0.5	SMM

```
*****************************************
 Structure being measured:
Northern Edge of Cavity (Late in event)
*****************************************


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


START TIME:


Event began at t = 0 + -0.122E+03 +/-  0.368E+01 [minutes]
In more convenient units:
Event began at DOY  55  9:28 +/-  0.368E+01 [minutes]


Origin defined at DOY 55 11:30

RADIAL INFORMATION:

RADIAL VELOCITY =   223. +/-    23. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:


    c(1) =    0.336E+01 +/-    0.500E-01 [solar radii]
    c(2) =    0.192E-01 +/-    0.200E-02 [radii/min]
    c(2) =    0.223E+03 +/-    0.232E+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)= 0.46525E-01 [radii] see Bevington pg. 114
            error in c(2)= 0.20104E-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) = 255. +/-   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 11:31 =   0. km/sec
The TOTAL velocity at 11:31 = 223. km/sec

The TANGENTIAL velocity at 11:47 =   0. km/sec
The TOTAL velocity at 11:47 = 223. km/sec

The TANGENTIAL velocity at 11:55 =   0. km/sec
The TOTAL velocity at 11:55 = 223. km/sec

The TANGENTIAL velocity at 12: 4 =   0. km/sec
The TOTAL velocity at 12: 4 = 223. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.27
Standard Deviation in start time measurement =   0.122E+02
Error in time =   0.36129E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.175E-02
Reduced Chi Squared = 0.576E-02
Chi Squared = 0.115E-01
The probability for exceeding chi square = 0.998E+00

The correlation coefficient =   0.989E+00
The probability that no LINEAR correlation exists between the variables =   0.1085E-01
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
 1989  55  11:31: 2  3.40 +/- 0.15  255.0 +/-  0.5     SMM
 1989  55  11:47:35  3.65 +/- 0.10  255.0 +/-  0.5     SMM
 1989  55  11:55:52  3.90 +/- 0.10  255.0 +/-  0.5     SMM
 1989  55  12: 4: 6  4.00 +/- 0.10  255.0 +/-  0.5     SMM


*****************************************
 Structure being measured:
 Northern Edge of Cavity (Late in event)
*****************************************


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


START TIME:

 tstart=DOY 55  8:56 from derivative = 0
 Event begins at   2.04 Solar Radii
 Origin defined at DOY 55 11:30


RADIAL INFORMATION:

RADIAL ACCELERATION =  0.216E-01 +/-  0.817E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

 c(1) =    0.337E+01 +/-    0.757E-01 [solar radii]
 c(2) =    0.172E-01 +/-    0.820E-02 [radii/min]
 c(2) =    0.199E+03 +/-    0.951E+02 [km/sec]
 c(3) =    0.558E-04 +/-    0.211E-03 [radii/min**2]
 c(3) =    0.216E-01 +/-    0.817E-01 [km/sec**2]
```

The computed ERRORS in coefficients [BEVINGTON] are:

```
     Approximate error in c(1) =  0.72938E-01 [radii] Bevington pg 154 (8-30)
         Exact error in c(1) =  0.15918E-01 [radii] Bevington pg 154 (8-28)
     Approximate error in c(2) =  0.97672E-02 [radii/min] Bevington pg 154 (8-30)
         Exact error in c(2) =  0.44861E-02 [radii/min] Bevington pg 154 (8-28)
     Approximate error in c(3) =  0.27620E-03 [radii/min**]  Bevington pg 154 (8-30)
         Exact error in c(3) =  0.12922E-03 [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) = 255. +/-   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 11:31 =   0. km/sec
The TOTAL velocity at 11:31 = 201. km/sec

The TANGENTIAL velocity at 11:47 =   0. km/sec
The TOTAL velocity at 11:47 = 222. km/sec

The TANGENTIAL velocity at 11:55 =   0. km/sec
The TOTAL velocity at 11:55 = 233. km/sec

The TANGENTIAL velocity at 12: 4 =   0. km/sec
The TOTAL velocity at 12: 4 = 243. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.27
Standard Deviation in start time measurement =   0.122E+02
Value of reduced Chi Squared returned from nllst2 = 0.253E-02
Reduced Chi Squared = 0.120E-01
Chi Squared = 0.120E-01
The probability for exceeding chi square = 0.960E+00

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 = 0.8743E+00
The correlation between the data and the time**2 term =   0.9102E+00
OThe correlation between the data and the complete equation of motion =   0.9740E+00
 SEE BEVINGTON "Data Reduction and Error Analysis" [1969]