SMM C/P 1989 DOY282   62 +/-   0 degrees

height = h + velocity*time   # data points =   6

Top of Cavity

    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

21:00
DOY282
22:00
23:00
0:00
DOY283
1:00
2:00
3:00
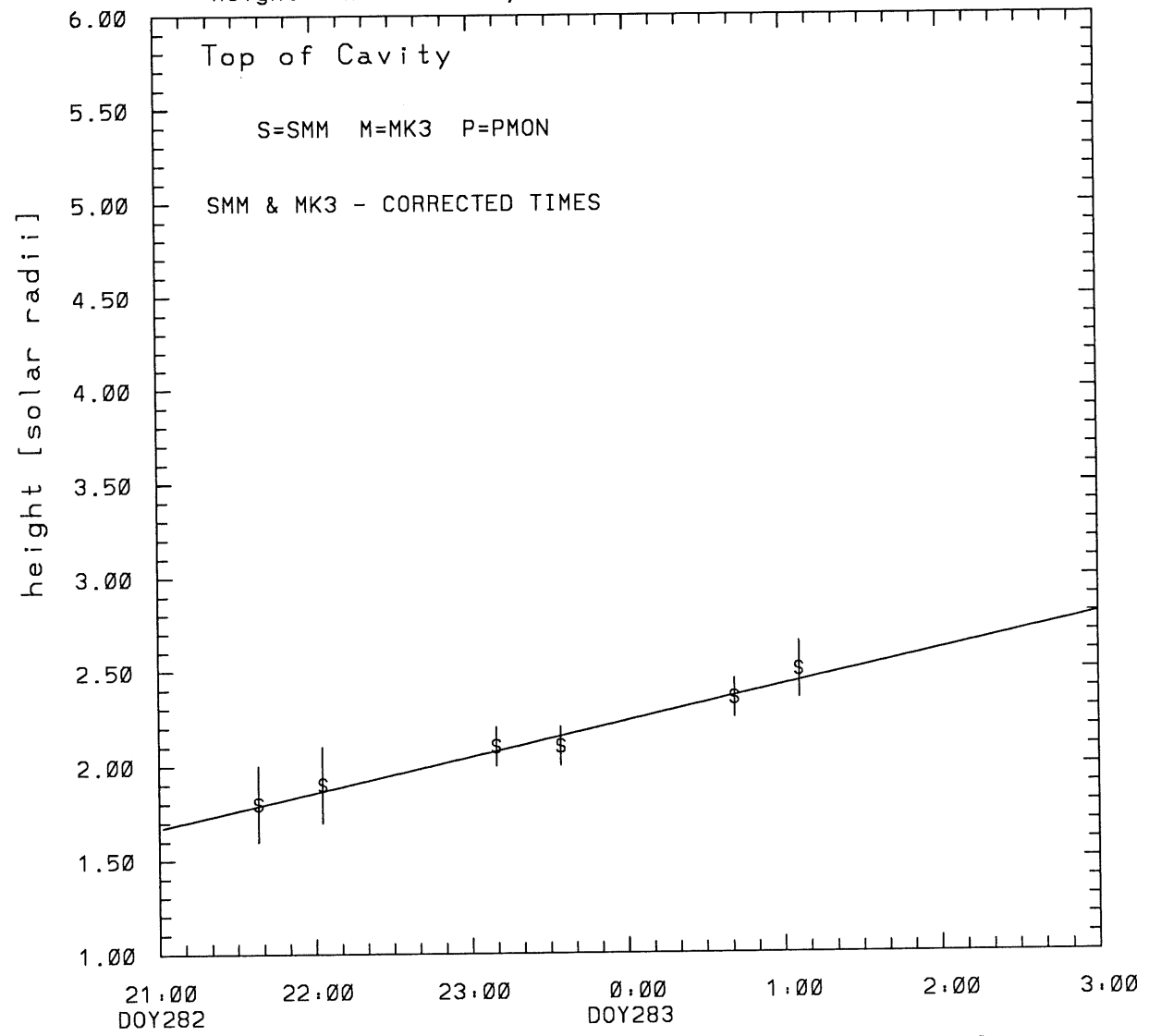
    tstart=DOY282 17:28 +/-   3.0 [min.]
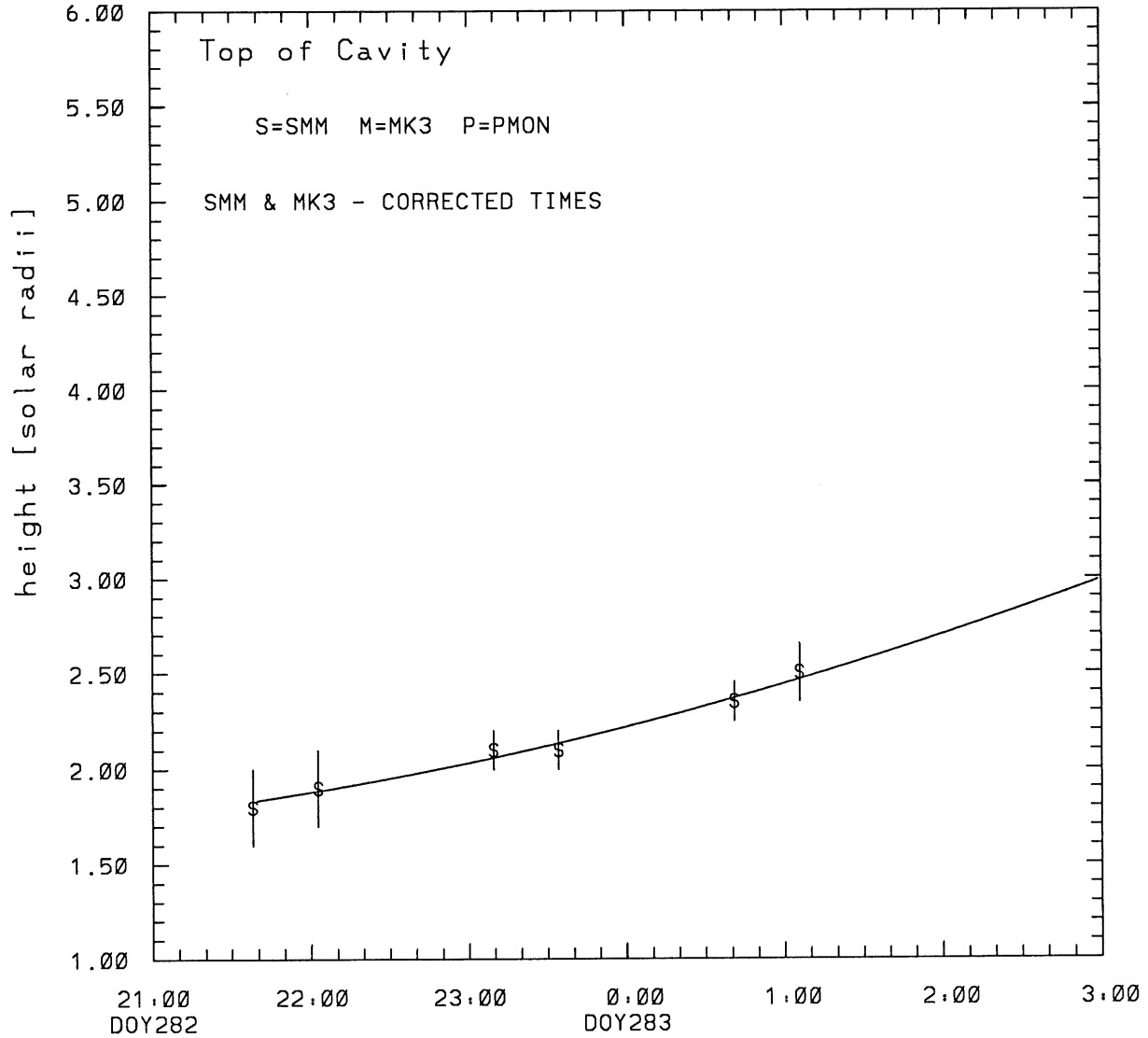   radial velocity=   36. +/-   3. [km/sec]

SMM C/P 1989 DOY282   62 +/- Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   6
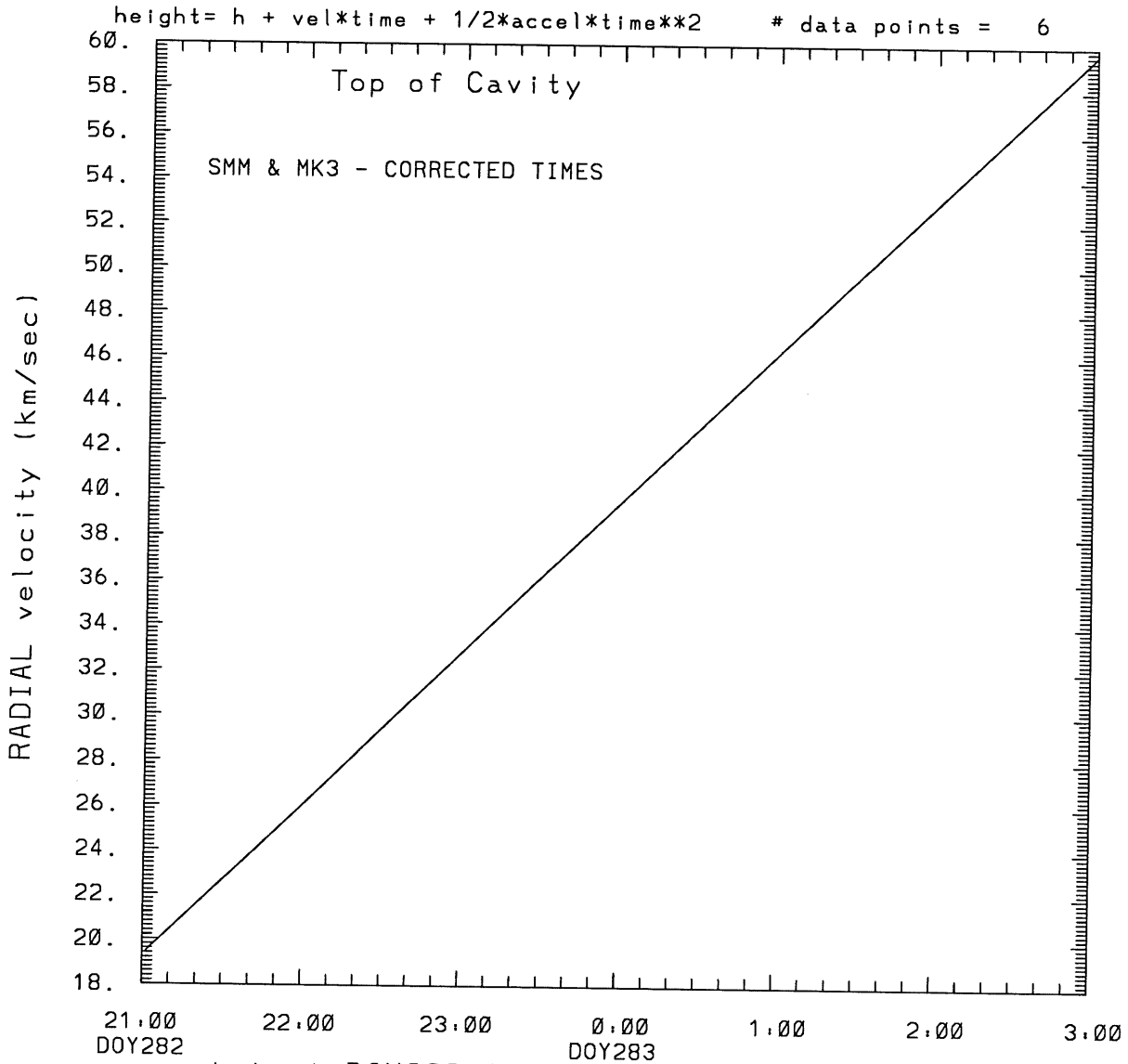
Top of Cavity

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

21:00   22:00   23:00   0:00   1:00   2:00   3:00
DOY282   DOY283

tstart=DOY282 18: 8   from derivative=Ø
Event begins at   1.62 Solar Radii
radial acceleration= 0.0019 +/- 0.0015 [km/sec**2]
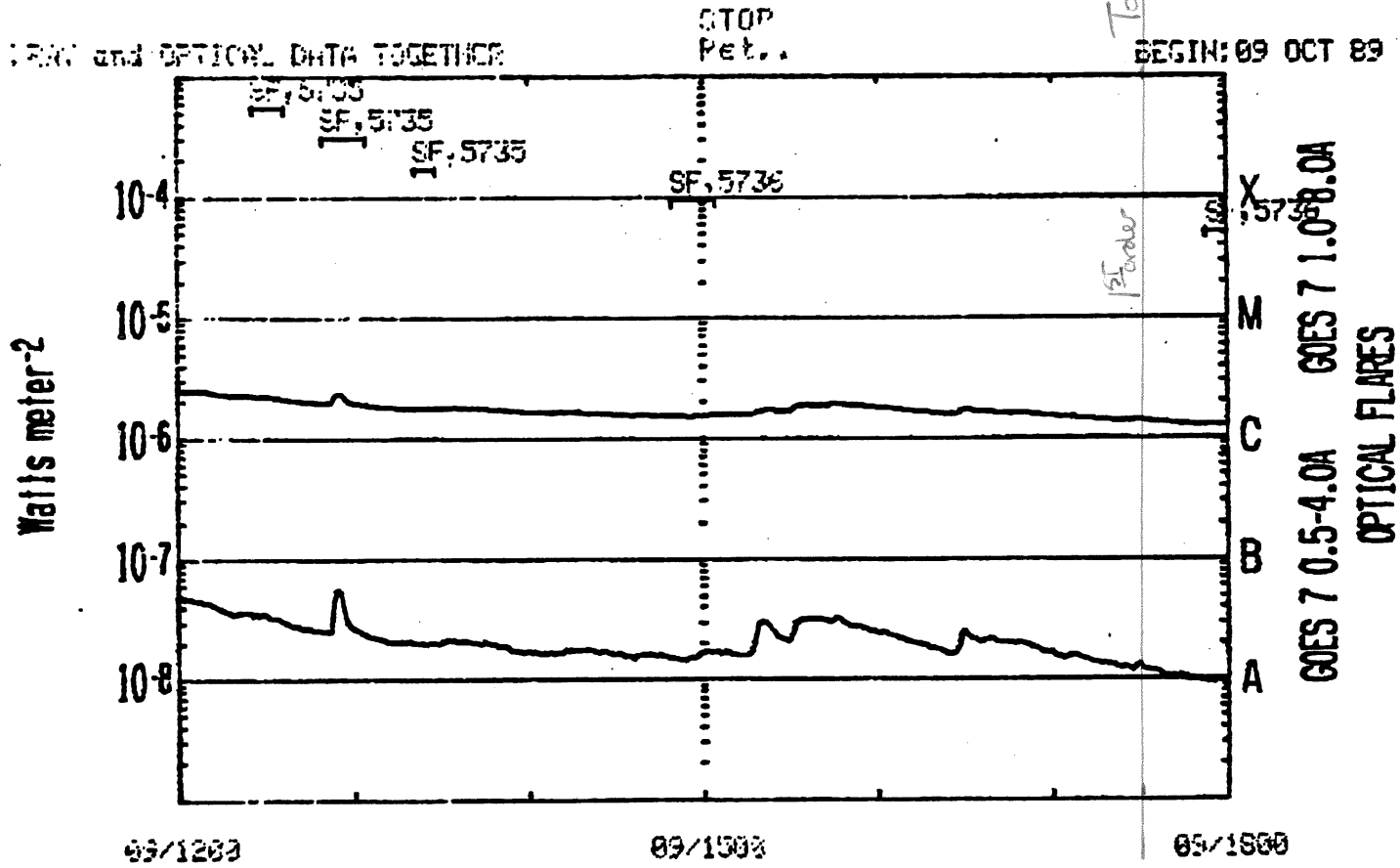
SMM C/P   1989 DOY282   62 +/-   Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   6

Top of Cavity

SMM & MK3 - CORRECTED TIMES

RADIAL velocity (km/sec)

60.
58.
56.
54.
52.
50.
48.
46.
44.
42.
40.
38.
36.
34.
32.
30.
28.
26.
24.
22.
20.
18.

21:00   22:00   23:00   0:00   1:00   2:00   3:00
DOY282   DOY283

tstart=DOY282 18: 8   from derivative=Ø
Event begins at   1.62 Solar Radii
radial acceleration=Ø.187E-Ø2 km/sec**2

1989 DOY 282

SRAY and OPTICAL DATA TOGETHER

STOP
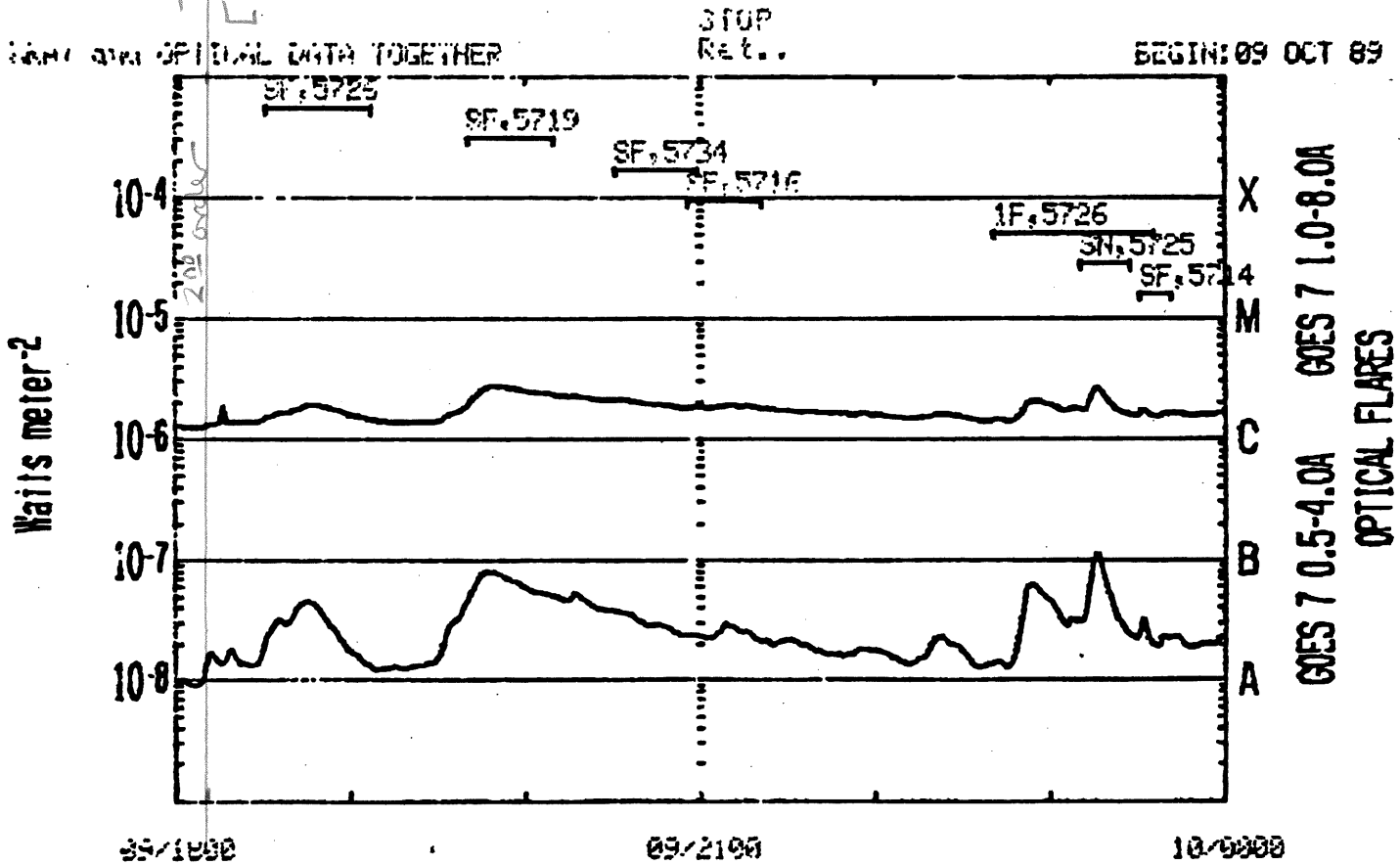Pet..

BEGIN: 09 OCT 89

Top of Cavity Center = 54°
[17.31] 1st order

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

SAA's
NIGHT

RUN: 1929UT
11 OCT 89

see next
page for 2nd
order

1989 DOT 282

RAW AND OPTICAL DATA TOGETHER   STOP Ret..   BEGIN: 09 OCT 89

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

SAA's
NIGHT
RUN: 1932UT
11 OCT 89

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

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

                                 error in        error in
year doy     time     radii   radius     angle    angle   datatype
1989 282  21:37:57   1.80 +/- 0.20     62.0 +/-  0.5       SMM
1989 282  22: 2:43   1.90 +/- 0.20     62.0 +/-  0.5       SMM
1989 282  23: 9:28   2.10 +/- 0.10     62.0 +/-  0.5       SMM
1989 282  23:34:14   2.10 +/- 0.10     62.0 +/-  0.5       SMM
1989 283   0:40:59   2.35 +/- 0.10     62.0 +/-  0.5       SMM
1989 283   1: 5:45   2.50 +/- 0.15     62.0 +/-  0.5       SMM


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

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

START TIME:

 Event began at t = 0 + -0.214E+03 +/-  0.305E+01 [minutes]
 In more convenient units:
 Event began at DOY 282 17:28 +/-  0.305E+01 [minutes]

 Origin defined at DOY282 21: 0

RADIAL INFORMATION:

RADIAL VELOCITY =    36. +/-      3. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

 c(1) =     0.167E+01 +/-    0.483E-01 [solar radii]
 c(2) =     0.313E-02 +/-    0.280E-03 [radii/min]
 c(2) =     0.363E+02 +/-    0.325E+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)= 0.40044E-01 [radii] see Bevington pg. 114
             error in c(2)= 0.24902E-03 [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) = 62. +/-    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 RADIAL velocity at 21:37 =   36. km/sec

The RADIAL velocity at 22: 2 =   36. km/sec
```

The RADIAL velocity at 23: 9 =   36. km/sec

The RADIAL velocity at 23:34 =   36. km/sec

The RADIAL velocity at 0:40 =   36. km/sec

The RADIAL velocity at 1: 5 =   36. km/sec

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

 Fit is ok [ier=1]

 Standard Deviation in the height = 0.26
 Standard Deviation in start time measurement =   0.757E+02
 Error in time =   0.29525E+02 using best fit method
 See Taylor Error Analysis [Univ of Colorado] pg.78

 Value of reduced Chi Squared returned from nllst2 = 0.167E-02
 Reduced Chi Squared = 0.961E-02
 Chi Squared = 0.384E-01
 The probability for exceeding chi square = 0.100E+01

 The correlation coefficient =   0.989E+00
 The probability that no LINEAR correlation exists between the variables =   0.1866]
 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 282  21:37:57   1.80 +/- 0.20      62.0 +/-   0.5        SMM
 1989 282  22: 2:43   1.90 +/- 0.20      62.0 +/-   0.5        SMM
 1989 282  23: 9:28   2.10 +/- 0.10      62.0 +/-   0.5        SMM
 1989 282  23:34:14   2.10 +/- 0.10      62.0 +/-   0.5        SMM
 1989 283   0:40:59   2.35 +/- 0.10      62.0 +/-   0.5        SMM
 1989 283   1: 5:45   2.50 +/- 0.15      62.0 +/-   0.5        SMM


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


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


 START TIME:

  tstart=DOY282 18: 8 from derivative = 0
 Event begins at   1.62 Solar Radii
  Origin defined at DOY282 21: 0

 RADIAL INFORMATION:

 RADIAL ACCELERATION =  0.187E-02 +/-  0.155E-02 km/sec**2

 The computed RADIAL coefficients and errors FROM NLLST2 are:

   c(1) =      0.176E+01 +/-      0.902E-01 [solar radii]
   c(2) =      0.166E-02 +/-      0.124E-02 [radii/min]
   c(2) =      0.193E+02 +/-      0.144E+02 [km/sec]
   c(3) =      0.483E-05 +/-      0.401E-05 [radii/min**2]
   c(3) =      0.187E-02 +/-      0.155E-02 [km/sec**2]

   The computed ERRORS in coefficients [BEVINGTON] are:

      Approximate error in c(1) =   0.69901E-01 [radii] Bevington pg 154 (8-30)
            Exact error in c(1) =   0.28706E-01 [radii] Bevington pg 154 (8-28)
      Approximate error in c(2) =   0.11829E-02 [radii/min] Bevington pg 154 (8-30)
            Exact error in c(2) =   0.55407E-03 [radii/min] Bevington pg 154 (8-28)
      Approximate error in c(3) =   0.40864E-05 [radii/min**2] Bevington pg 154 (8-30)
            Exact error in c(3) =   0.19476E-05 [radii/min**2] 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) =  62. +/-   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 RADIAL velocity at 21:37 =    24. km/sec
```

The RADIAL velocity at 22: 2 =   26. km/sec

The RADIAL velocity at 23: 9 =   34. km/sec

The RADIAL velocity at 23:34 =   37. km/sec

The RADIAL velocity at 0:40 =   44. km/sec

The RADIAL velocity at 1: 5 =   47. km/sec

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

 Fit is ok [ier=1]

 Standard Deviation in the height = 0.26
 Standard Deviation in start time measurement =   0.757E+02
 Value of reduced Chi Squared returned from nllst2 = 0.153E-02
 Reduced Chi Squared = 0.681E-02
 Chi Squared = 0.204E-01
 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 =   0.8149E+00
 The correlation between the data and the time**2 term =   0.8455E+00
 The correlation between the data and the complete equation of motion=0.9749E+00
 SEE BEVINGTON "Data Reduction and Error Analysis" [1969]