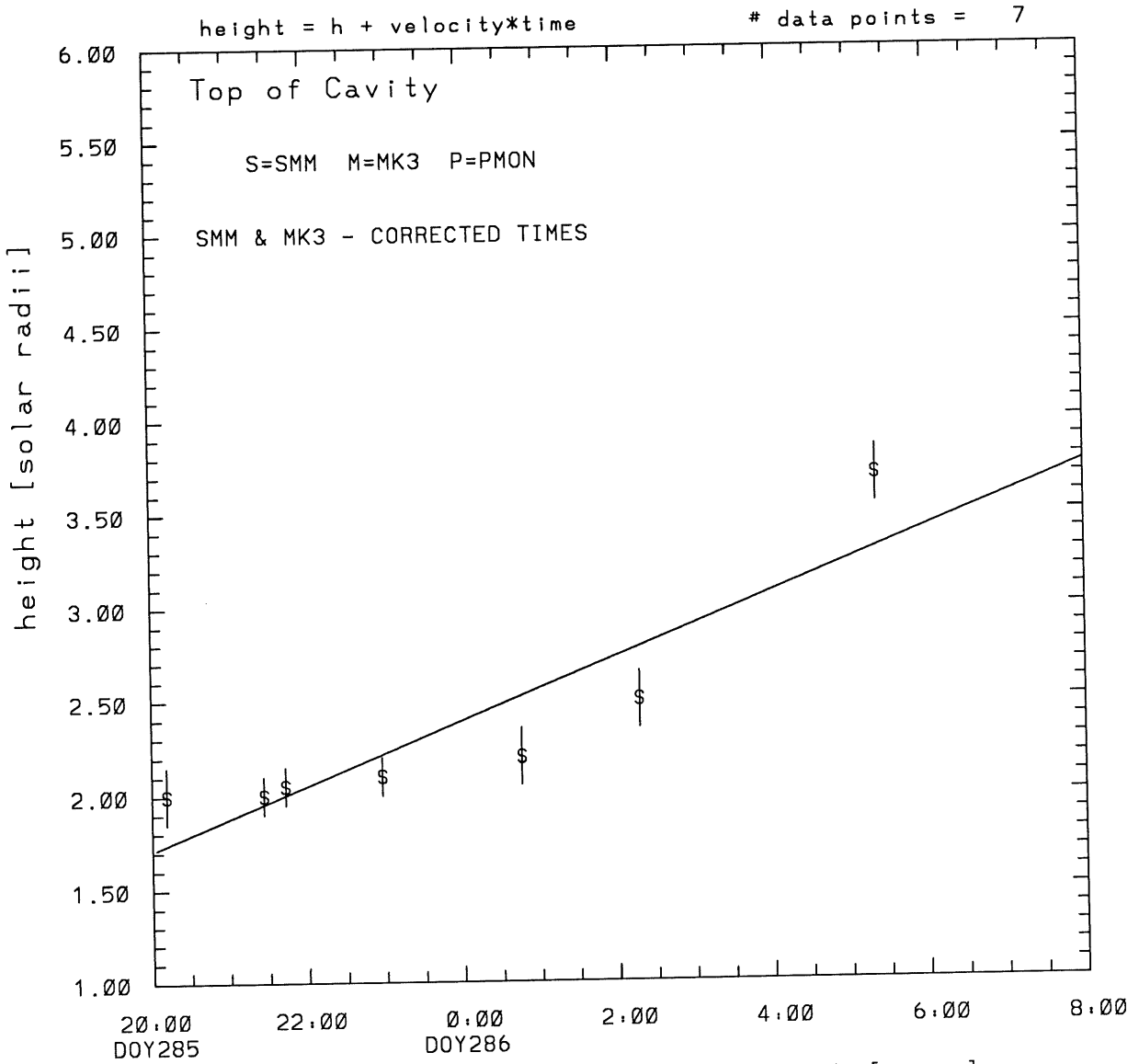
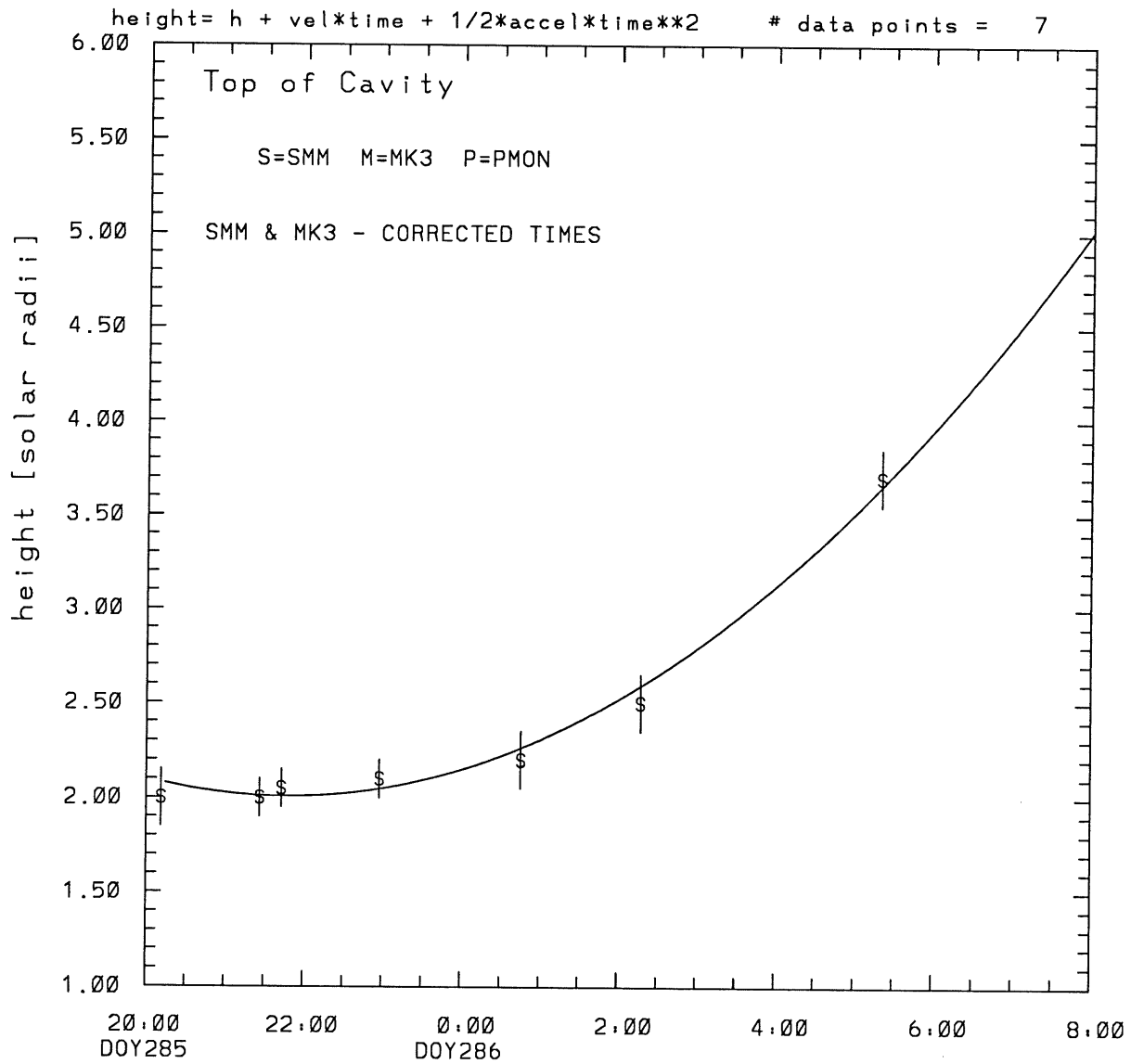


SMM C/P 1989 DOY285 120 +/- 0 degrees



tstart=DOY285 15:51 +/- 22.1 [min.]  
radial velocity= 33. +/- 6. [km/sec]

SMM C/P 1989 DOY285 120 +/- 0 degrees

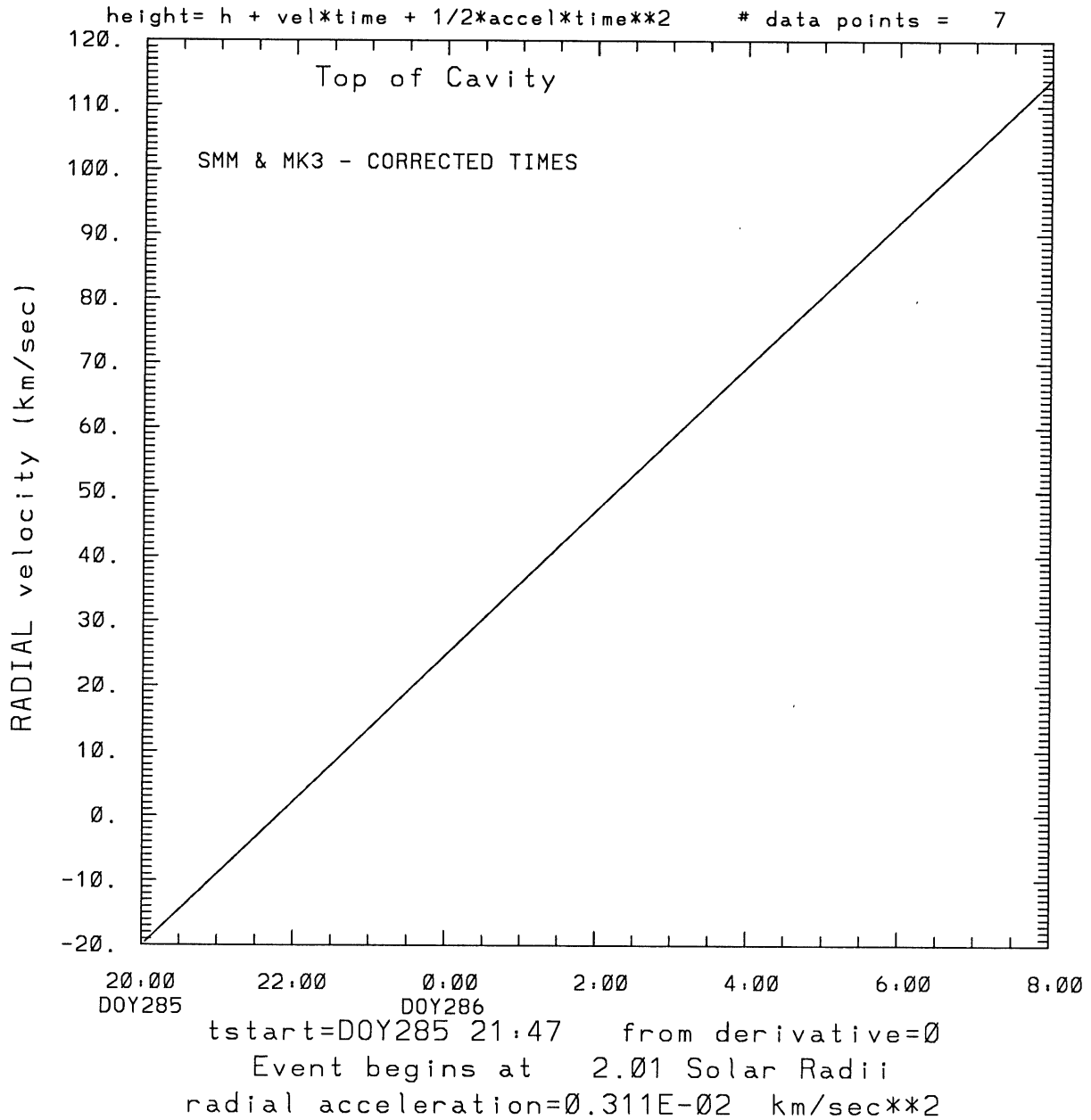


tstart=DOY285 21:47 from derivative=0

Event begins at 2.01 Solar Radii

radial acceleration = 0.0031 +/- 0.0004 [km/sec\*\*2]

SMM C/P 1989 DOY285 120 +/- 0 degrees



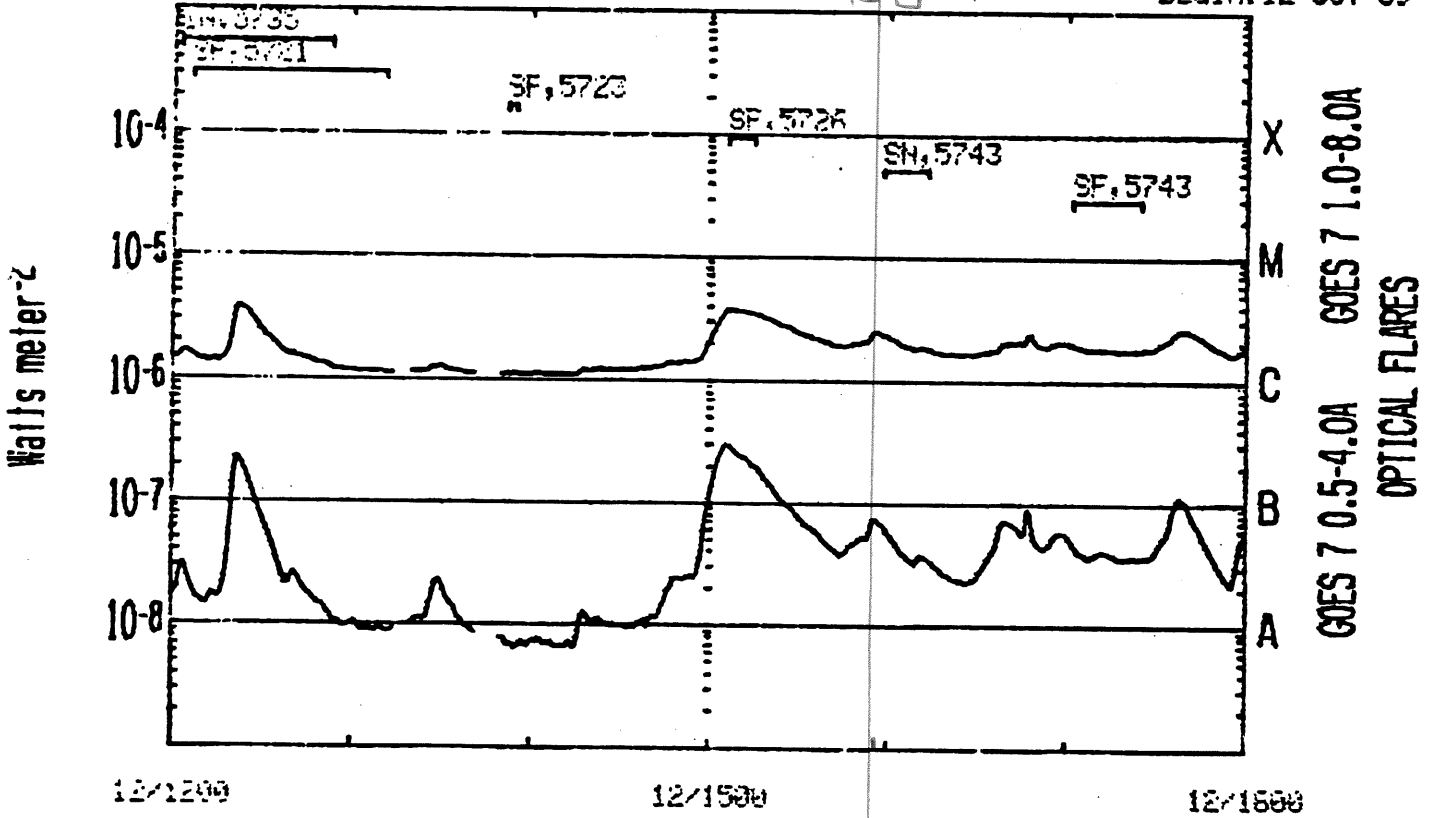
1989 004 285

Top of Cavity center = 15  
[15:54] 1st order

APPLY GMS OPTICAL DATA TOGETHER

STOP  
Ret..

BEGIN: 12 OCT 89



GOES 7 0.5-4.0A  
OPTICAL FLARES

12/1200

12/1500

12/1800

SAA's  
NIGHT

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

RUN: 1849UT  
16 OCT 89

see next page  
for 2<sup>nd</sup> order fit

1989 DOY 285

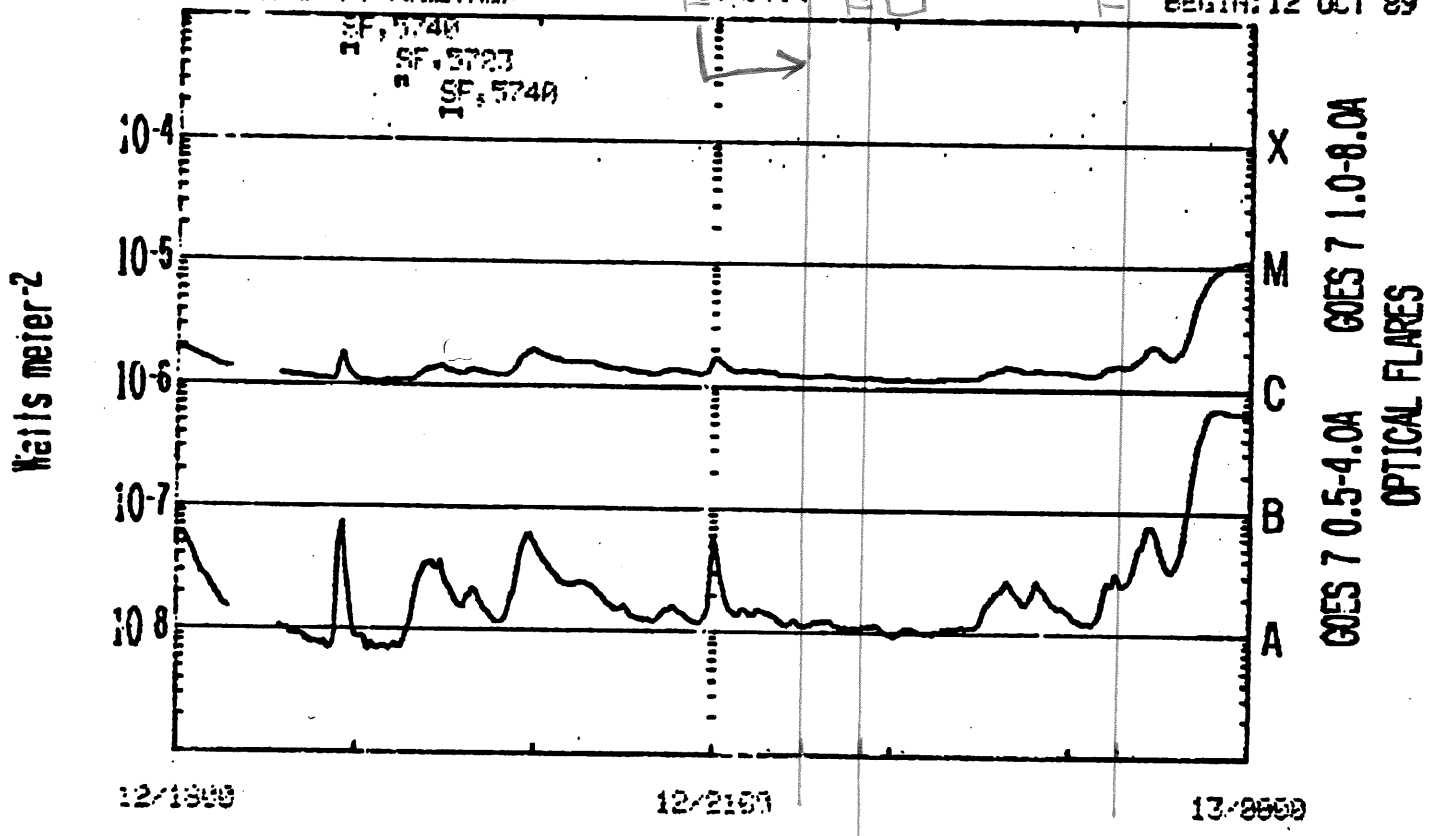
Top of Cavity OMITTING  
FIRST FOUR  
POINTS  
[21:30] 1st order

Top of Cavity  
[21:50] 2nd order

Top of Cavity OMITTING  
FIRST FOUR DATA POINTS  
[23:16] 2nd order

with and OPTICAL DATA TOGETHER

BEGIN: 12 OCT 89



GOES 7 0.5-4.0A OPTICAL FLARES  
GOES 7 1.0-8.0A

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

RUN: 1851UT  
16 OCT 89

\*\*\*\*\*  
This is a 1 order run  
\*\*\*\*\*

\*\*\*\*\*  
INPUT:  
\*\*\*\*\*

year	doy	time	radii	radius	error in angle	error in angle	datatype
1989	285	20:11:27	2.00 +/-	0.15	120.0 +/-	0.5	SMM
1989	285	21:26:24	2.00 +/-	0.10	120.0 +/-	0.5	SMM
1989	285	21:42:55	2.05 +/-	0.10	120.0 +/-	0.5	SMM
1989	285	22:57:52	2.10 +/-	0.10	120.0 +/-	0.5	SMM
1989	286	0:45:50	2.20 +/-	0.15	120.0 +/-	0.5	SMM
1989	286	2:17:17	2.50 +/-	0.15	120.0 +/-	0.5	SMM
1989	286	5:20:44	3.70 +/-	0.15	120.0 +/-	1.0	SMM

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

\*\*\*\*\*  
OUTPUT:  
\*\*\*\*\*

START TIME:

Event began at t = 0 + -0.249E+03 +/- 0.221E+02 [minutes]  
In more convenient units:  
Event began at DOY 285 15:51 +/- 0.221E+02 [minutes]

Origin defined at DOY285 20: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 33. +/- 6. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.171E+01 +/- 0.133E+00 [solar radii]  
c(2) = 0.284E-02 +/- 0.540E-03 [radii/min]  
c(2) = 0.330E+02 +/- 0.627E+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)= 0.17951E+00 [radii] see Bevington pg. 114  
error in c(2)= 0.61920E-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) = 120. +/- 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 20:11 = 33. km/sec

The RADIAL velocity at 21:26 = 33. km/sec

The RADIAL velocity at 21:42 = 33. km/sec  
The RADIAL velocity at 22:57 = 33. km/sec  
The RADIAL velocity at 0:45 = 33. km/sec  
The RADIAL velocity at 2:17 = 33. km/sec  
The RADIAL velocity at 5:20 = 33. 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 = 0.178E+03  
Error in time = 0.22903E+03 using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.485E-01  
Reduced Chi Squared = 0.445E+00  
Chi Squared = 0.222E+01  
The probability for exceeding chi square = 0.999E+00

The correlation coefficient = 0.901E+00  
The probability that no LINEAR correlation exists between the variables = 0.55481  
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

\*\*\*\*\*  
This is a 2 order run  
\*\*\*\*\*

\*\*\*\*\*  
INPUT:  
\*\*\*\*\*

year	doy	time	radii	radius	error in angle	error in angle	datatype
1989	285	20:11:27	2.00 +/-	0.15	120.0 +/-	0.5	SMM
1989	285	21:26:24	2.00 +/-	0.10	120.0 +/-	0.5	SMM
1989	285	21:42:55	2.05 +/-	0.10	120.0 +/-	0.5	SMM
1989	285	22:57:52	2.10 +/-	0.10	120.0 +/-	0.5	SMM
1989	286	0:45:50	2.20 +/-	0.15	120.0 +/-	0.5	SMM
1989	286	2:17:17	2.50 +/-	0.15	120.0 +/-	0.5	SMM
1989	286	5:20:44	3.70 +/-	0.15	120.0 +/-	1.0	SMM

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

\*\*\*\*\*  
OUTPUT:  
\*\*\*\*\*

START TIME:

tstart=DOY285 21:47 from derivative = 0  
Event begins at 2.01 Solar Radii  
Origin defined at DOY285 20: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.311E-02 +/- 0.383E-03 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.210E+01 +/- 0.618E-01 [solar radii]  
c(2) = -0.173E-02 +/- 0.585E-03 [radii/min]  
c(2) = -0.201E+02 +/- 0.679E+01 [km/sec]  
c(3) = 0.804E-05 +/- 0.990E-06 [radii/min\*\*2]  
c(3) = 0.311E-02 +/- 0.383E-03 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.69148E-01 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.20063E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.62165E-03 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.24870E-03 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.10506E-05 [radii/min\*\*2] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.40295E-06 [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) = 120. +/- 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 20:11 = -18. km/sec  
The RADIAL velocity at 21:26 = -4. km/sec  
The RADIAL velocity at 21:42 = -1. km/sec  
The RADIAL velocity at 22:57 = 13. km/sec  
The RADIAL velocity at 0:45 = 33. km/sec  
The RADIAL velocity at 2:17 = 50. km/sec  
The RADIAL velocity at 5:20 = 85. 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 = 0.178E+03  
Value of reduced Chi Squared returned from nllst2 = 0.410E-02  
Reduced Chi Squared = 0.265E-01  
Chi Squared = 0.106E+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 = 0.8121E+00  
The correlation between the data and the time\*\*2 term = 0.8783E+00  
The correlation between the data and the complete equation of motion=0.9949E+00  
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]