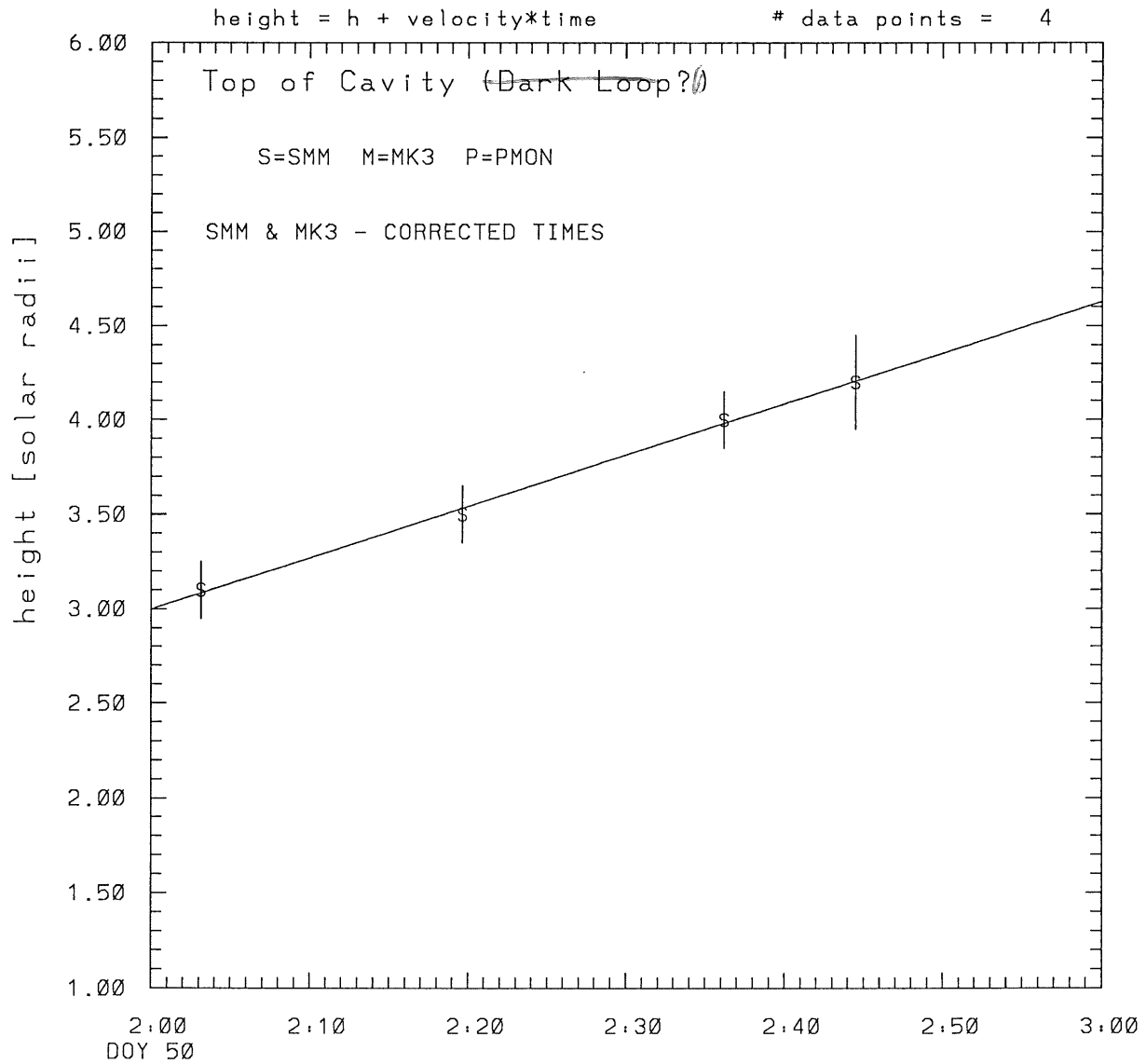
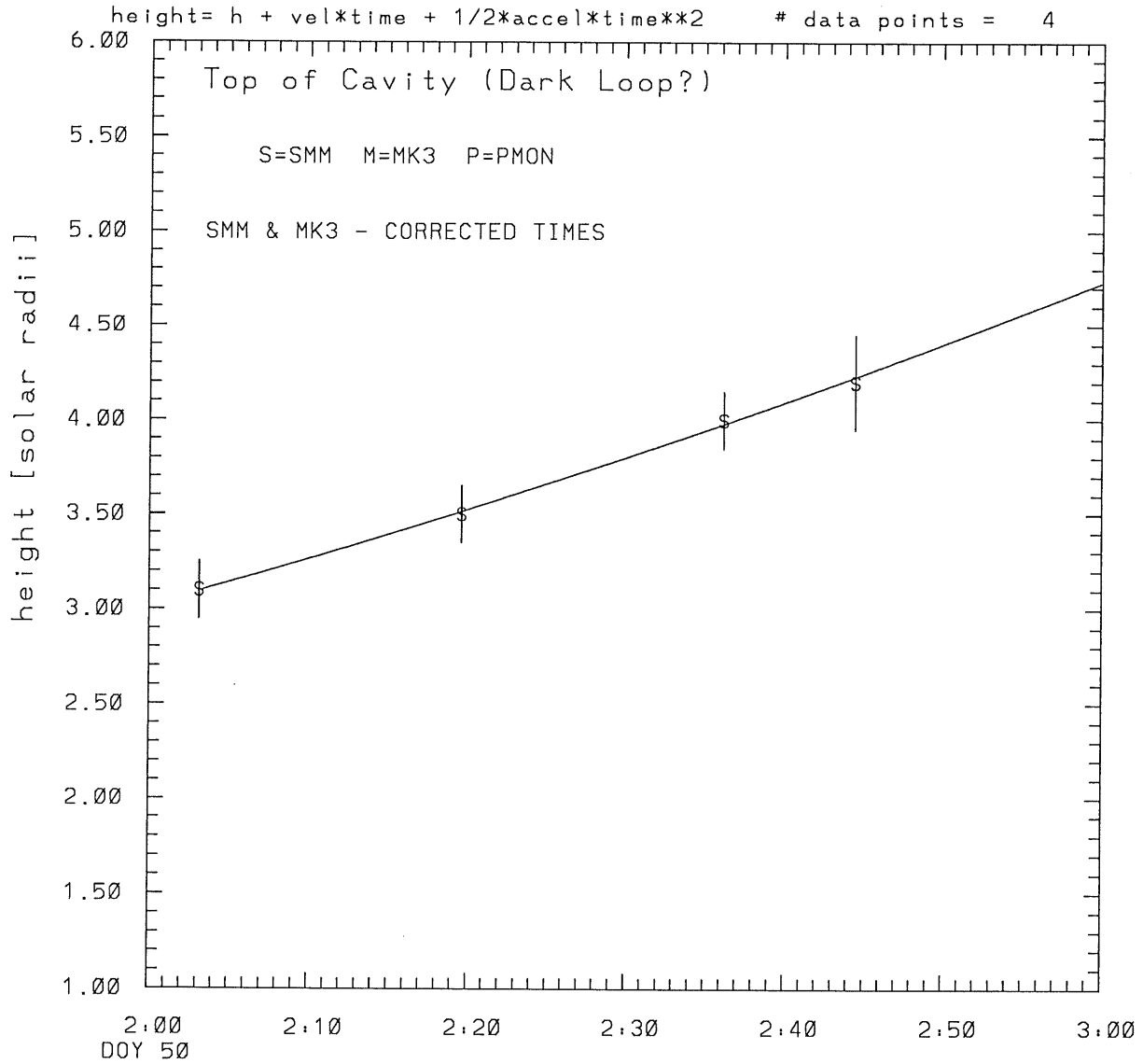


SMM C/P 1989 DOY 50 260 +/- 0 degrees



tstart=DOY 50 0:48 +/- 0.8 [min.]  
radial velocity= 315. +/- 10. [km/sec]

SMM C/P 1989 DOY 50 260 +/- 0 degrees

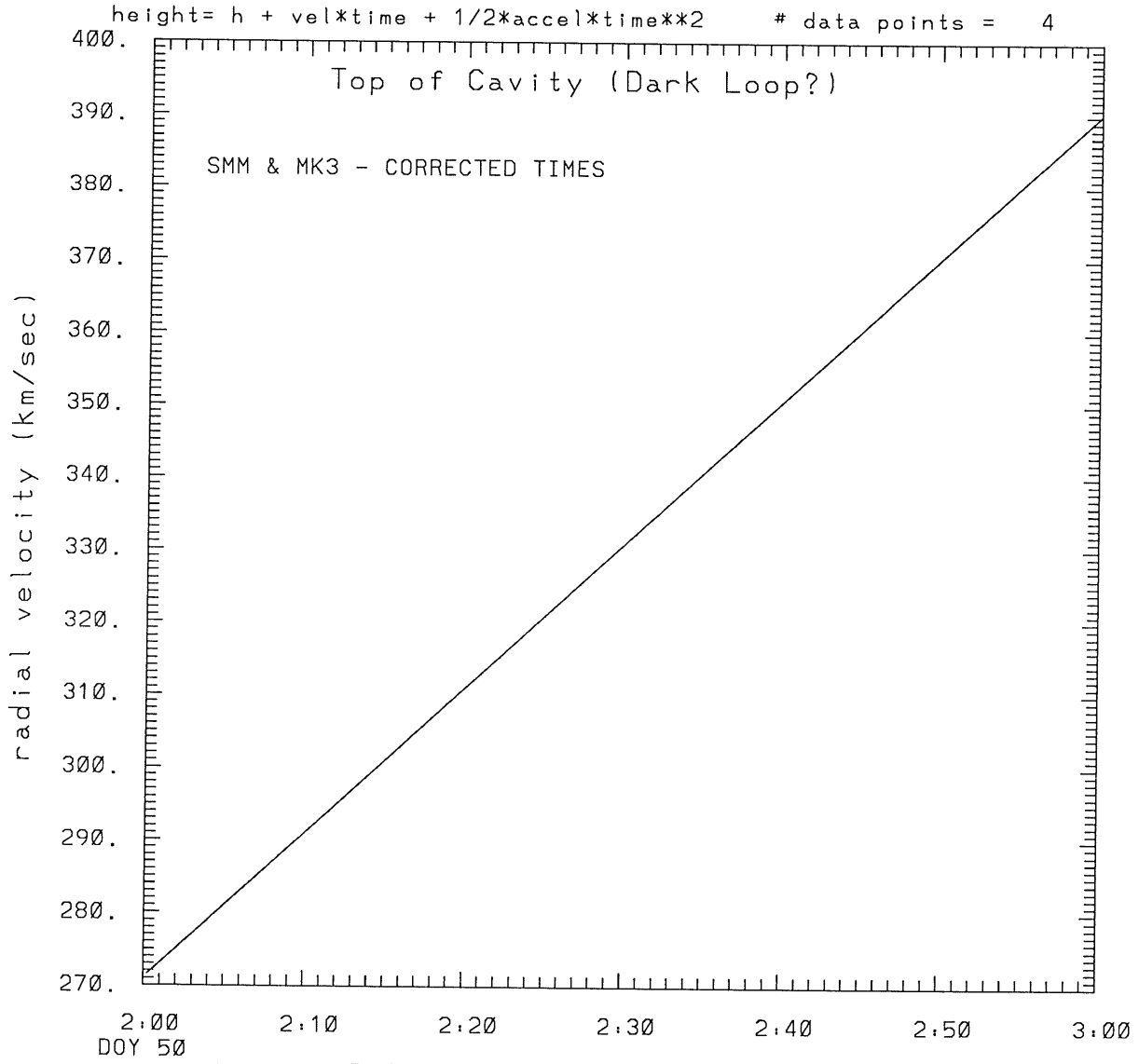


tstart=DOY 49 23:44 from derivative=0

Event begins at 1.43 Solar Radii

radial acceleration =  $0.0331 \pm 0.0275$  [km/sec\*\*2]

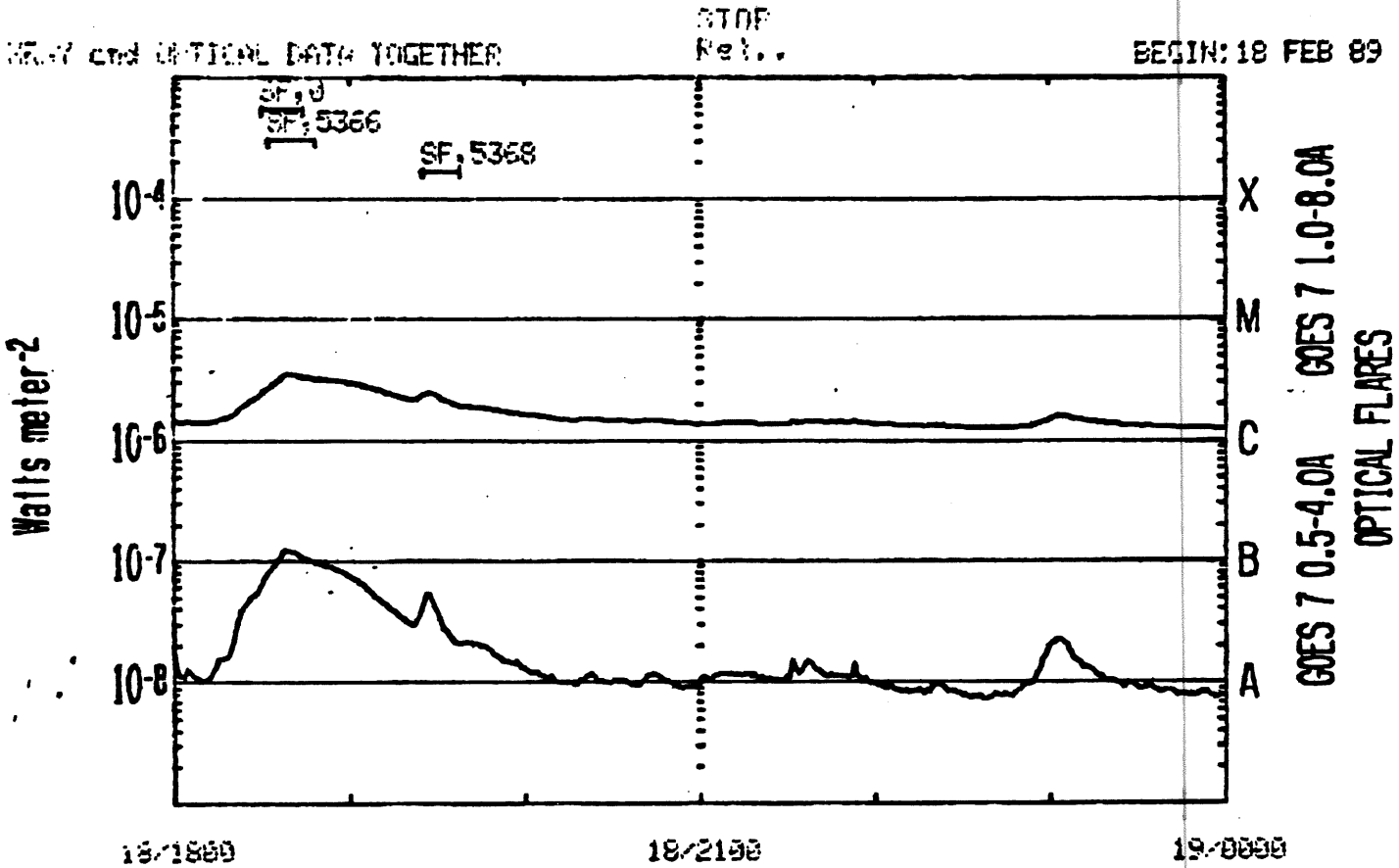
SMM C/P 1989 DOY 50 260 +/- 0 degrees



tstart=DOY 49 23:44 from derivative=0  
Event begins at 1.43 Solar Radii  
radial acceleration= $0.331E-01$  km/sec\*\*2

1989 Day 049

Top of Cavity [center px = 267°  
[23:44] 2<sup>00</sup> order

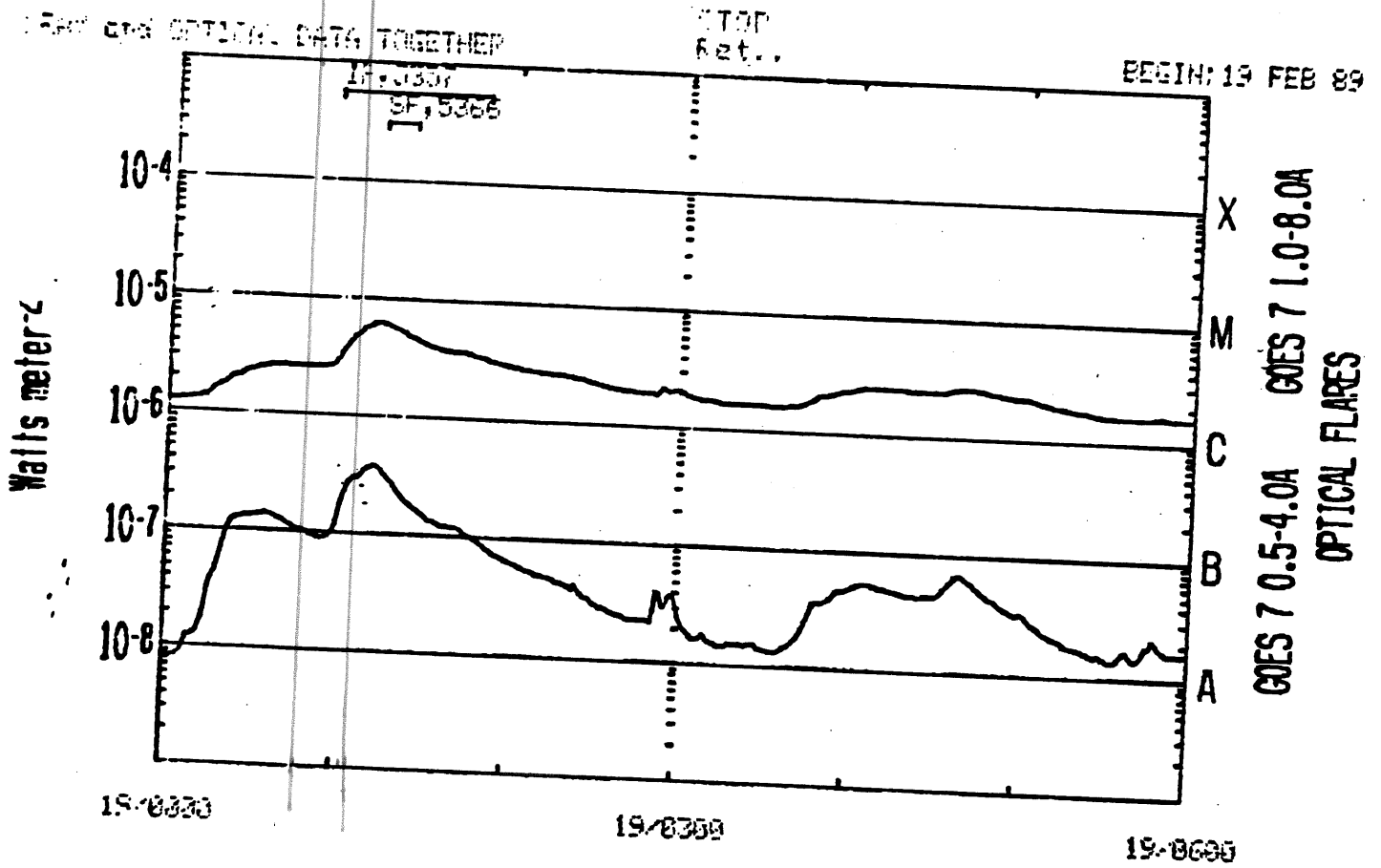


GOES-7 1 MIN DATA; OPTICAL FLARE DUR. IMP. REGION

SAA's  
NIGHT  
RUN: 2142UT  
25 FEB 89

1989 Day 050

Top of Cavity center pa = 267° [0.48] 1<sup>st</sup> order  
Top of Cavity [1:05] 2<sup>nd</sup> order, omitting  
Last data point.



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

SAA's  
NIGHT

RUN: 1545UT  
26 FEB 89

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

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

year	doy	time	radii	radius	error in	angle	error in	datatype
1989	50	2: 3: 9	3.10	+/- 0.15	260.0	+/- 0.5	SMM	
1989	50	2:19:39	3.50	+/- 0.15	260.0	+/- 0.5	SMM	
1989	50	2:36:12	4.00	+/- 0.15	260.0	+/- 0.5	SMM	
1989	50	2:44:29	4.20	+/- 0.25	260.0	+/- 0.5	SMM	

\*\*\*\*\*  
Structure being measured:  
Top of Cavity (Dark Loop?)  
\*\*\*\*\*

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

START TIME:

Event began at  $t = 0 + -0.737E+02 +/- 0.802E+00$  [minutes]  
In more convenient units:  
Event began at DOY 50 0:48 +/- 0.802E+00 [minutes]

Origin defined at DOY 50 2: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 315. +/- 10. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.300E+01 +/- 0.230E-01$  [solar radii]  
 $c(2) = 0.271E-01 +/- 0.857E-03$  [radii/min]  
 $c(2) = 0.315E+03 +/- 0.995E+01$  [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  $c(1) = 0.27580E-01$  [radii] see Bevington pg. 114  
error in  $c(2) = 0.90862E-03$  [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) = 260. +/- 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: 3 = 0. km/sec

The TOTAL velocity at 2: 3 = 315. km/sec

The TANGENTIAL velocity at 2:19 = 0. km/sec

The TOTAL velocity at 2:19 = 315. km/sec

The TANGENTIAL velocity at 2:36 = 0. km/sec

The TOTAL velocity at 2:36 = 315. km/sec

The TANGENTIAL velocity at 2:44 = 0. km/sec

The TOTAL velocity at 2:44 = 315. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.50

Standard Deviation in start time measurement = 0.159E+02

Error in time = 0.15035E+01 using best fit method

See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.651E-03

Reduced Chi Squared = 0.176E-02

Chi Squared = 0.351E-02

The probability for exceeding chi square = 0.999E+00

The correlation coefficient = 0.999E+00

The probability that no LINEAR correlation exists between the variables = 0.1120E-02

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	datatype
1989	50	2: 3: 9	3.10	+/- 0.15	260.0	+/- 0.5	SMM	
1989	50	2:19:39	3.50	+/- 0.15	260.0	+/- 0.5	SMM	
1989	50	2:36:12	4.00	+/- 0.15	260.0	+/- 0.5	SMM	
1989	50	2:44:29	4.20	+/- 0.25	260.0	+/- 0.5	SMM	

\*\*\*\*\*  
Structure being measured:  
Top of Cavity (Dark Loop?)  
\*\*\*\*\*

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

START TIME:

tstart=DOY 49 23:44 from derivative = 0  
Event begins at 1.43 Solar Radii  
Origin defined at DOY 50 2: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.331E-01 +/- 0.275E-01 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.302E+01 +/- 0.285E-01 [solar radii]  
c(2) = 0.234E-01 +/- 0.323E-02 [radii/min]  
c(2) = 0.271E+03 +/- 0.375E+02 [km/sec]  
c(3) = 0.856E-04 +/- 0.712E-04 [radii/min\*\*2]  
c(3) = 0.331E-01 +/- 0.275E-01 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.50376E-01 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.72507E-02 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.53818E-02 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.17628E-02 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.11060E-03 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.44547E-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) = 260. +/- 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: 3 = 0. km/sec

The TOTAL velocity at 2: 3 = 277. km/sec

The TANGENTIAL velocity at 2:19 = 0. km/sec

The TOTAL velocity at 2:19 = 310. km/sec

The TANGENTIAL velocity at 2:36 = 0. km/sec

The TOTAL velocity at 2:36 = 343. km/sec

The TANGENTIAL velocity at 2:44 = 0. km/sec

The TOTAL velocity at 2:44 = 359. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.50

Standard Deviation in start time measurement = 0.159E+02

Value of reduced Chi Squared returned from nllst2 = 0.567E-03

Reduced Chi Squared = 0.532E-02

Chi Squared = 0.532E-02

The probability for exceeding chi square = 0.981E+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 = 0.9623E+00

The correlation between the data and the time\*\*2 term = 0.8911E+00

The correlation between the data and the complete equation of motion = 0.1001E+01

SEE BEVINGTON "Data Reduction and Error Analysis" [1969]