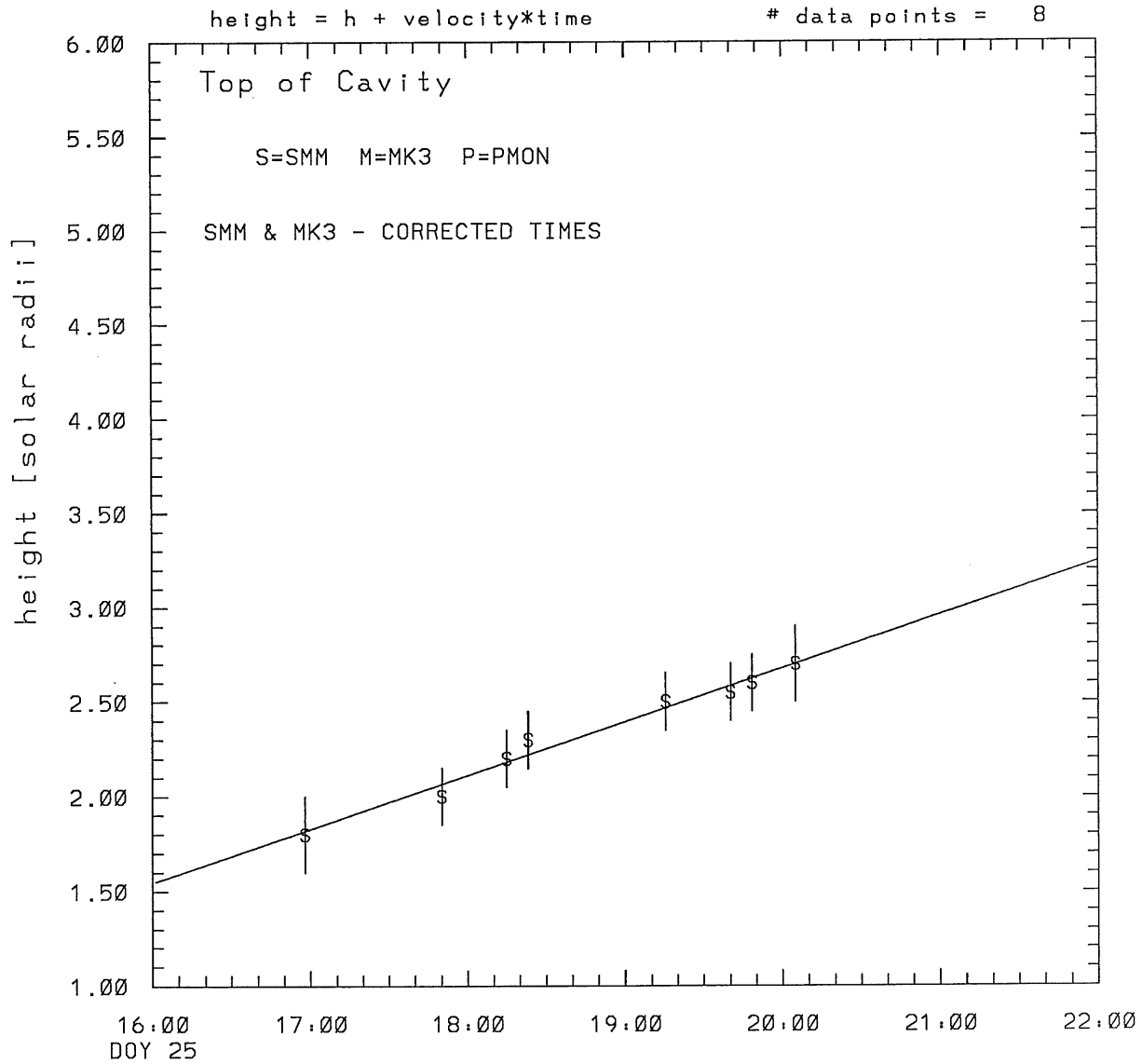
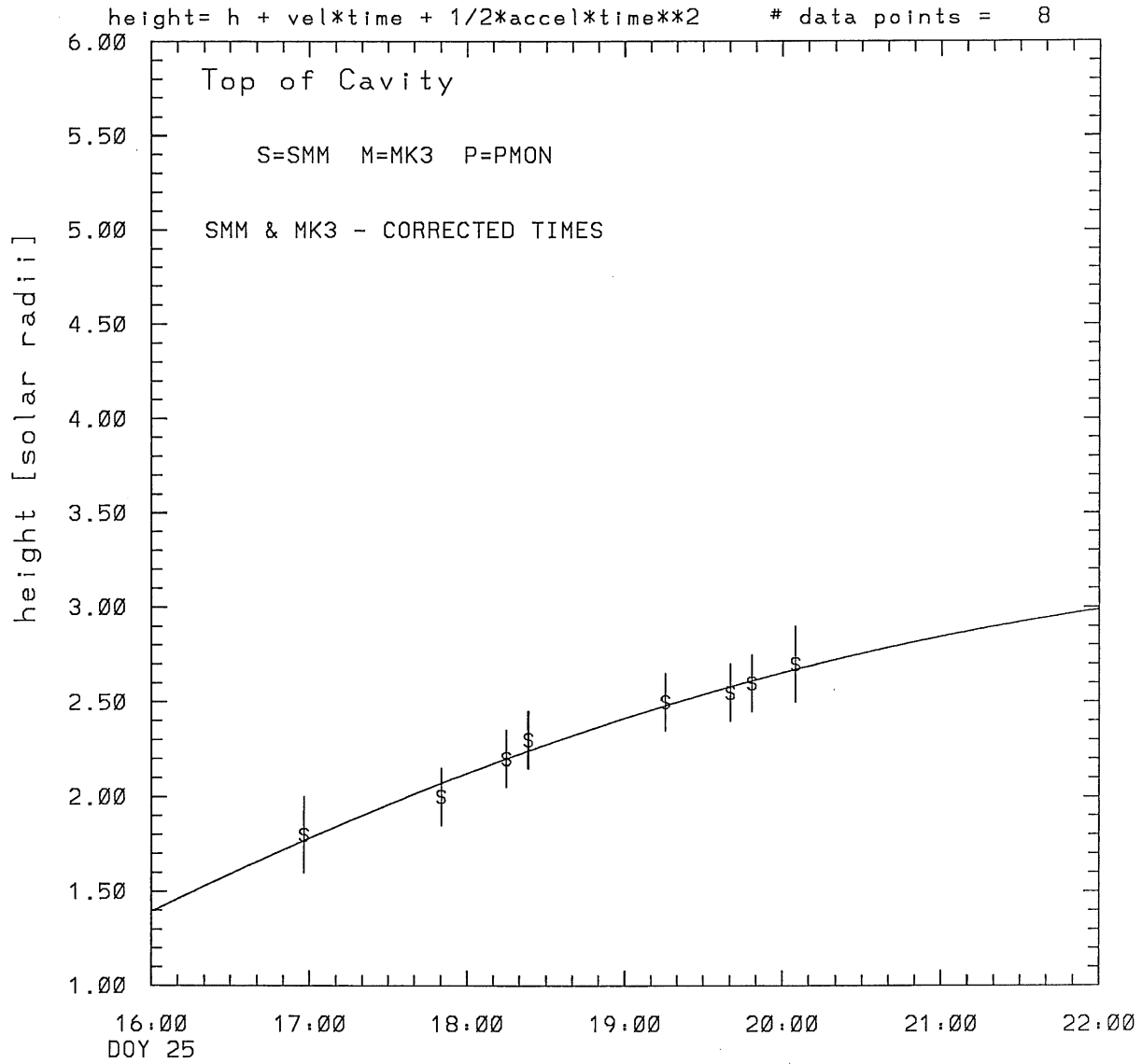


SMM C/P 1989 DOY 25 130 +/- 0 degrees



tstart=DOY 25 14: 6 +/- 1.0 [min.]  
radial velocity= 55. +/- 3. [km/sec]

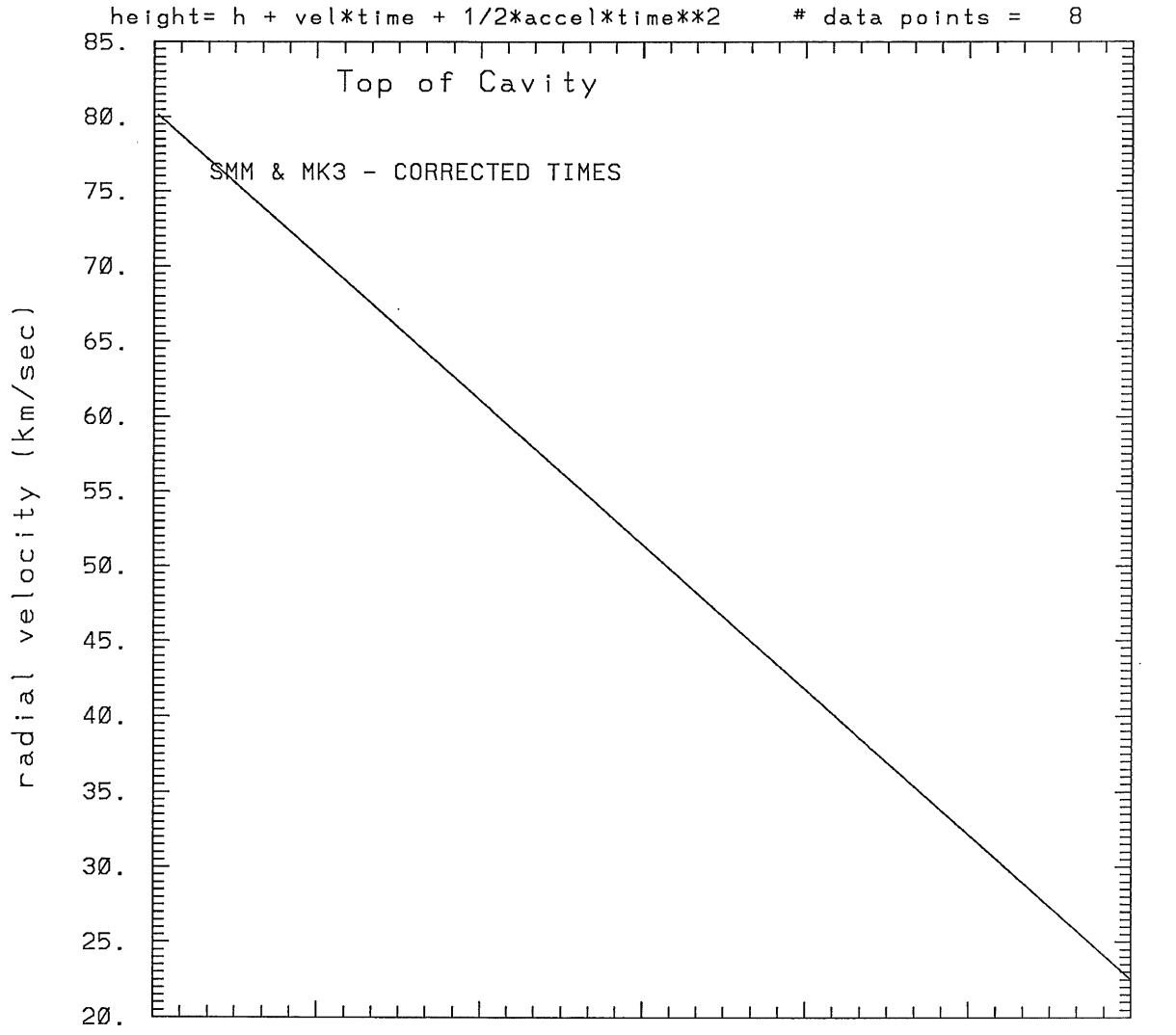
SMM C/P 1989 DOY 25 130 +/- 0 degrees



tstart=DOY 25 15: 8 +/- 8.8 [min.]

radial acceleration =  $-0.0027 \pm 0.0021$  [km/sec\*\*2]

SMM C/P 1989 DOY 25 130 +/- 0 degrees



16:00  
DOY 25

17:00

18:00

19:00

20:00

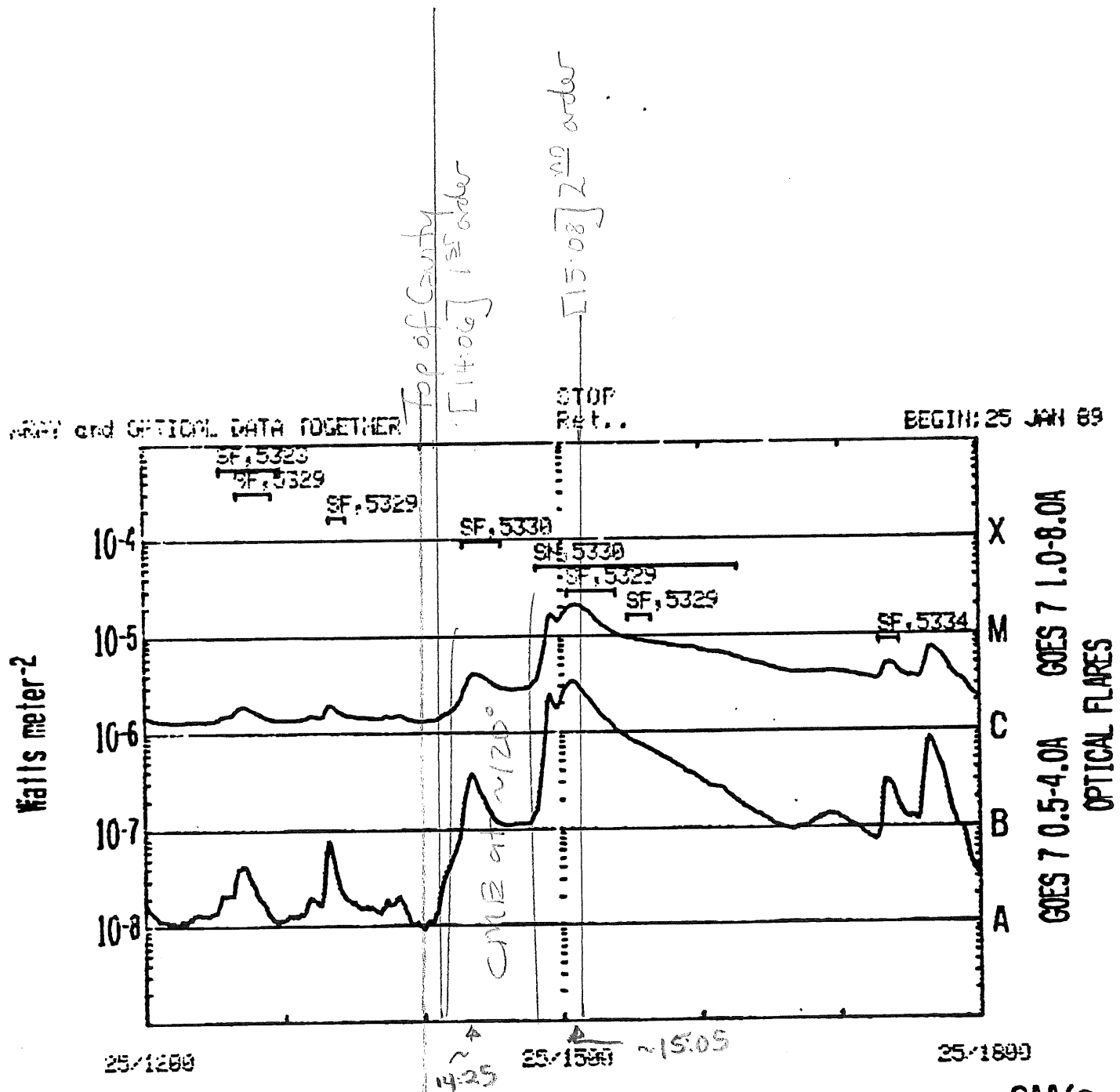
21:00

22:00

tstart=DOY 25 15: 8 +/-

8.8 [min.]

radial acceleration=-.268E-02 km/sec\*\*2



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

SAA's  
NIGHT  
RUN: 2032UT  
1 FEB 69

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

year	doy	time	radii	radius	error in	angle	angle	datatype
1989	25	16:57:49	1.80	+/- 0.20	130.0	+/- 0.5	SMM	
1989	25	17:50:11	2.00	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	18:14:59	2.20	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	18:23:14	2.30	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	19:15:31	2.50	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	19:40:17	2.55	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	19:48:31	2.60	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	20: 5: 2	2.70	+/- 0.20	130.0	+/- 0.5	SMM	

\*\*\*\*\*

Structure being measured:

Top of Cavity

\*\*\*\*\*

\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

Event began at  $t = 0 + -0.116E+03 +/- 0.996E+00$  [minutes]

In more convenient units:

Event began at DOY 25 14: 6 +/- 0.996E+00 [minutes]

Origin defined at DOY 25 16: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 55. +/- 3. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.154E+01 +/- 0.527E-01$  [solar radii]

$c(2) = 0.472E-02 +/- 0.296E-03$  [radii/min]

$c(2) = 0.547E+02 +/- 0.344E+01$  [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  $c(1) = 0.49216E-01$  [radii] see Bevington pg. 114

error in  $c(2) = 0.27662E-03$  [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) = 130. +/- 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 16:57 = 0. km/sec

The TOTAL velocity at 16:57 = 55. km/sec

The TANGENTIAL velocity at 17:50 = 0. km/sec

The TOTAL velocity at 17:50 = 55. km/sec

The TANGENTIAL velocity at 18:14 = 0. km/sec

The TOTAL velocity at 18:14 = 55. km/sec

The TANGENTIAL velocity at 18:23 = 0. km/sec

The TOTAL velocity at 18:23 = 55. km/sec

The TANGENTIAL velocity at 19:15 = 0. km/sec

The TOTAL velocity at 19:15 = 55. km/sec

The TANGENTIAL velocity at 19:40 = 0. km/sec

The TOTAL velocity at 19:40 = 55. km/sec

The TANGENTIAL velocity at 19:48 = 0. km/sec

The TOTAL velocity at 19:48 = 55. km/sec

The TANGENTIAL velocity at 20: 5 = 0. km/sec

The TOTAL velocity at 20: 5 = 55. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.32

Standard Deviation in start time measurement = 0.615E+02

Error in time = 0.24997E+02 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.221E-02

Reduced Chi Squared = 0.848E-02

Chi Squared = 0.509E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.990E+00

The probability that no LINEAR correlation exists between the variables = 0.2426E-05

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

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

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

year	day	time	radii	radius	error in	angle	error in	datatype
1989	25	16:57:49	1.80	+/- 0.20	130.0	+/- 0.5	SMM	
1989	25	17:50:11	2.00	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	18:14:59	2.20	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	18:23:14	2.30	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	19:15:31	2.50	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	19:40:17	2.55	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	19:48:31	2.60	+/- 0.15	130.0	+/- 0.5	SMM	
1989	25	20: 5: 2	2.70	+/- 0.20	130.0	+/- 0.5	SMM	

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

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

START TIME:

Event began at  $t = 0 + -0.535E+02 +/- 0.881E+01$  [minutes]  
In more convenient units:  
Event began at DOY 25 15: 8 +/- 0.881E+01 [minutes]

Origin defined at DOY 25 16: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  $-0.268E-02 +/- 0.212E-02$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) =  $0.139E+01 +/- 0.132E+00$  [solar radii]
- c(2) =  $0.693E-02 +/- 0.177E-02$  [radii/min]
- c(2) =  $0.804E+02 +/- 0.205E+02$  [km/sec]
- c(3) =  $-0.693E-05 +/- 0.547E-05$  [radii/min\*\*2]
- c(3) =  $-0.268E-02 +/- 0.212E-02$  [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

- Approximate error in c(1) =  $0.11786E+00$  [radii] Bevington pg 154 (8-30)
- Exact error in c(1) =  $0.31736E-01$  [radii] Bevington pg 154 (8-28)
- Approximate error in c(2) =  $0.16528E-02$  [radii/min] Bevington pg 154 (8-30)



Exact error in c(2) = 0.37703E-03 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.52120E-05 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.10635E-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) = 130. +/- 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 16:57 = 0. km/sec  
The TOTAL velocity at 16:57 = 71. km/sec

The TANGENTIAL velocity at 17:50 = 0. km/sec  
The TOTAL velocity at 17:50 = 63. km/sec

The TANGENTIAL velocity at 18:14 = 0. km/sec  
The TOTAL velocity at 18:14 = 59. km/sec

The TANGENTIAL velocity at 18:23 = 0. km/sec  
The TOTAL velocity at 18:23 = 57. km/sec

The TANGENTIAL velocity at 19:15 = 0. km/sec  
The TOTAL velocity at 19:15 = 49. km/sec

The TANGENTIAL velocity at 19:40 = 0. km/sec  
The TOTAL velocity at 19:40 = 45. km/sec

The TANGENTIAL velocity at 19:48 = 0. km/sec  
The TOTAL velocity at 19:48 = 44. km/sec

The TANGENTIAL velocity at 20: 5 = 0. km/sec  
The TOTAL velocity at 20: 5 = 41. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.32  
Standard Deviation in start time measurement = 0.615E+02  
Value of reduced Chi Squared returned from nllst2 = 0.203E-02  
Reduced Chi Squared = 0.790E-02

Chi Squared = 0.395E-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 = 0.8990E+00

The correlation between the data and the time\*\*2 term = 0.8928E+00

The correlation between the data and the complete equation of motion = 0.9792E+00

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