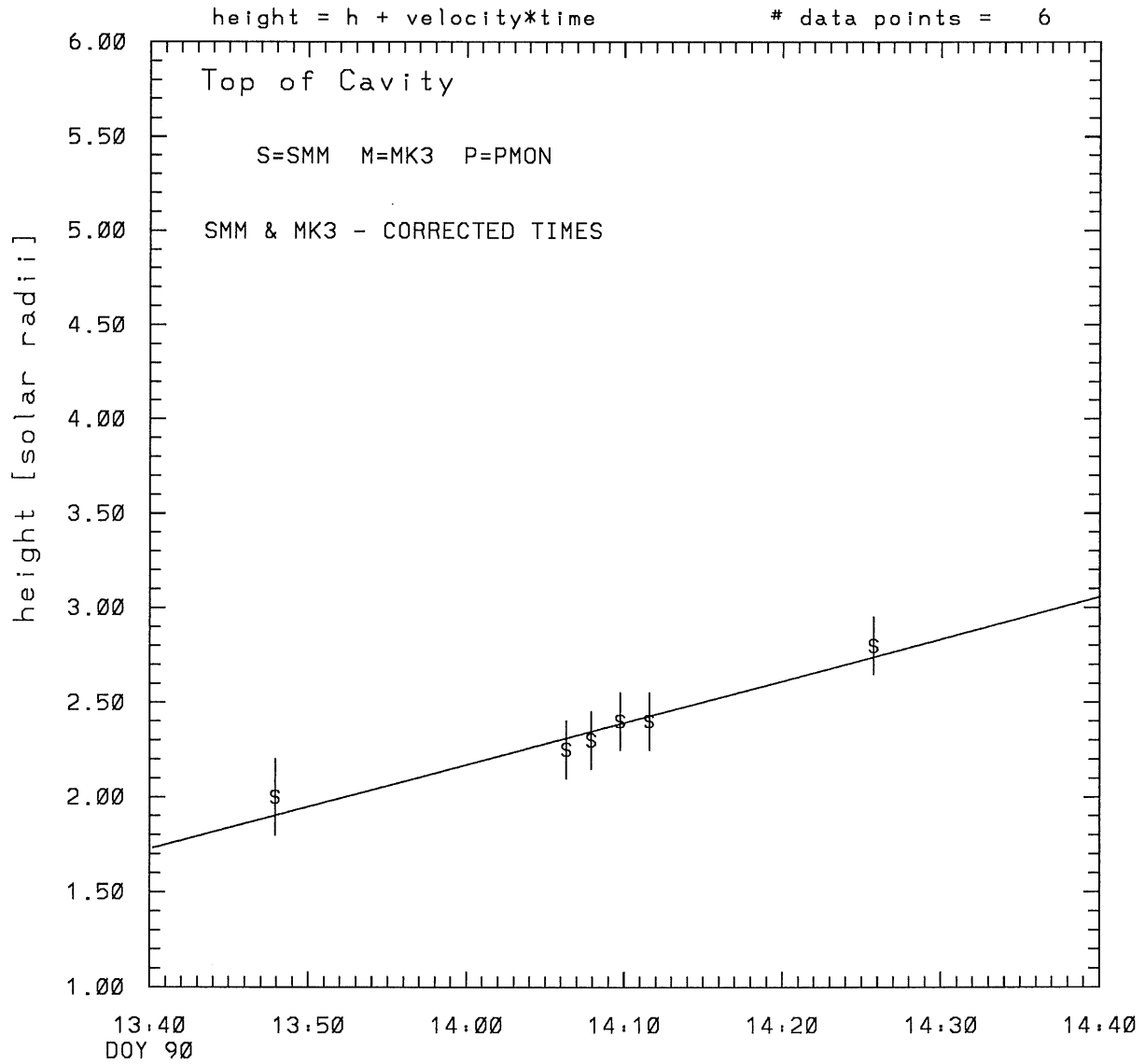
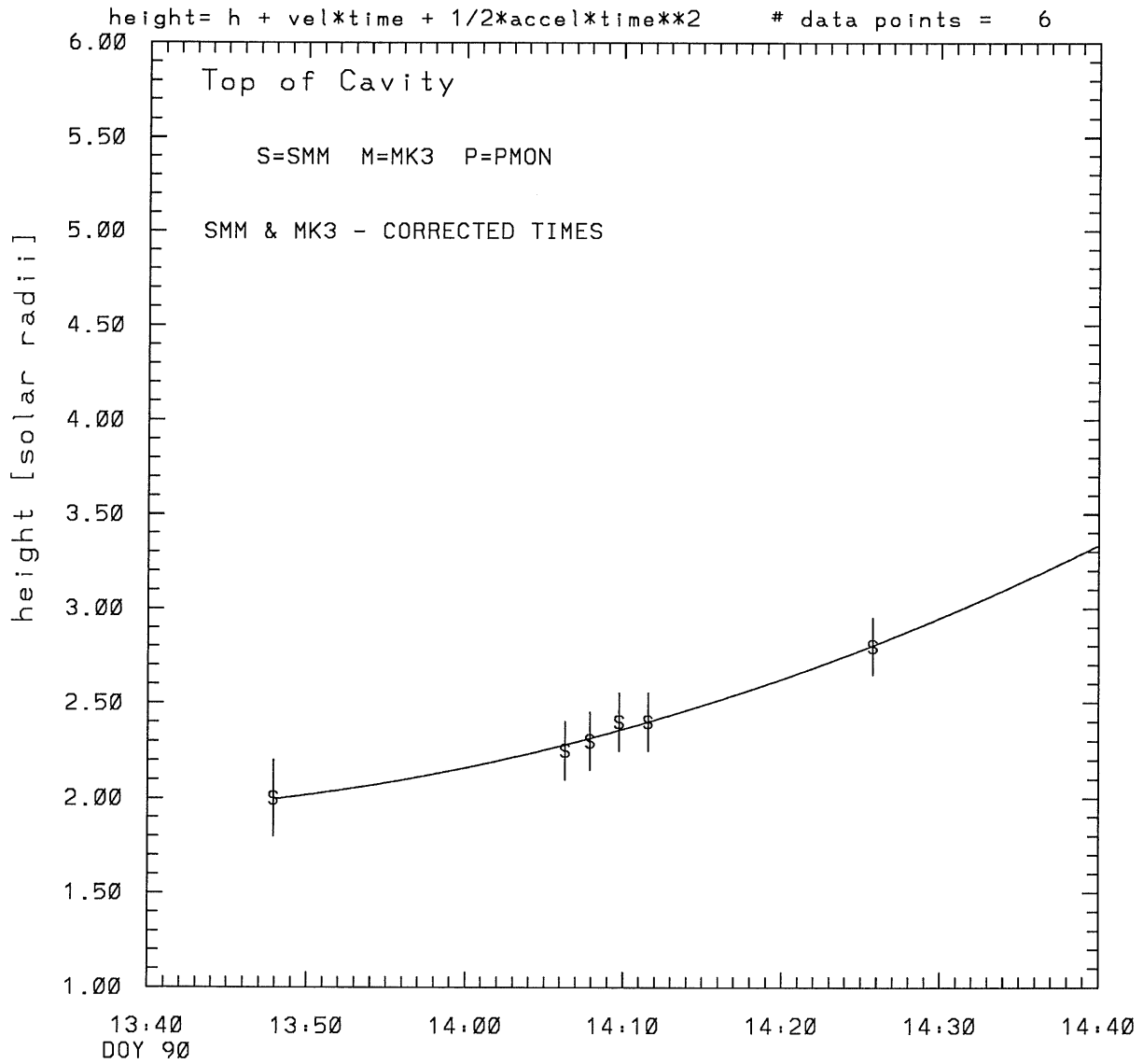


SMM C/P 1980 DOY 90 55 +/- 0 degrees



tstart=DOY 90 13: 9 +/- 2.2 [min.]  
radial velocity= 257. +/- 28. [km/sec]

SMM C/P 1980 DOY 90 55 +/- 0 degrees

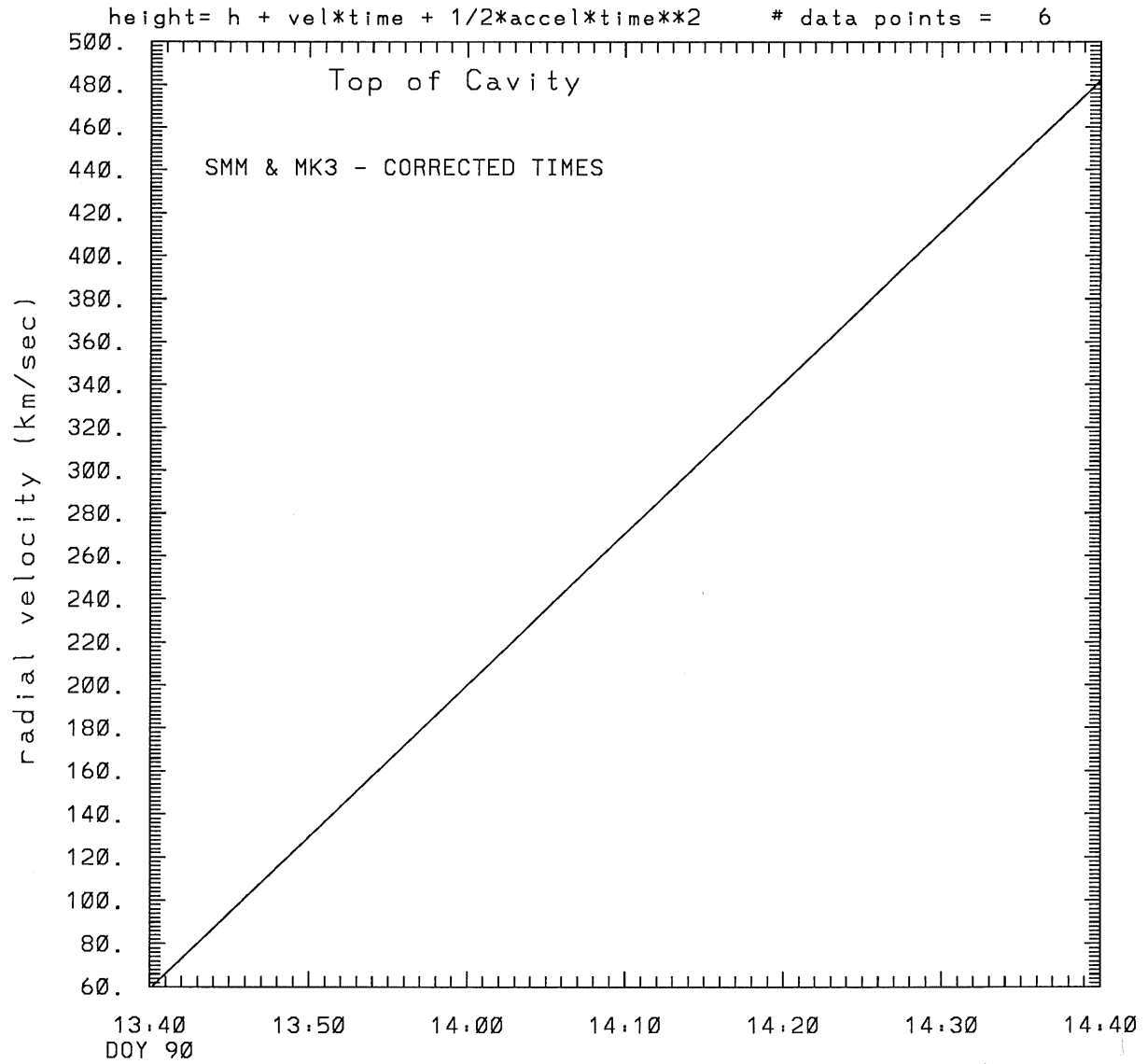


tstart=DOY 90 13:32 from derivative=0

Event begins at 1.91 Solar Radii

radial acceleration =  $0.1174 \pm 0.0293$  [km/sec\*\*2]

SMM C/P 1980 DOY 90 55 +/- 0 degrees



tstart=DOY 90 13:32 from derivative=0  
Event begins at 1.91 Solar Radii  
radial acceleration=0.117E+00 km/sec\*\*2

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

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

year	day	time	radii	radius	error in	angle	error in	datatype
1980	90	13:47:54	2.00	+/- 0.20	55.0	+/- 0.5	SMM	
1980	90	14: 6:20	2.25	+/- 0.15	55.0	+/- 0.5	SMM	
1980	90	14: 7:54	2.30	+/- 0.15	55.0	+/- 0.5	SMM	
1980	90	14: 9:45	2.40	+/- 0.15	55.0	+/- 0.5	SMM	
1980	90	14:11:35	2.40	+/- 0.15	55.0	+/- 0.5	SMM	
1980	90	14:25:45	2.80	+/- 0.15	55.0	+/- 0.5	SMM	

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

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

START TIME:

Event began at  $t = 0 + -0.328E+02 +/- 0.222E+01$  [minutes]  
In more convenient units:  
Event began at DOY 90 13: 9 +/- 0.222E+01 [minutes]

Origin defined at DOY 90 13:40

RADIAL INFORMATION:

RADIAL VELOCITY = 257. +/- 28. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

- c(1) = 0.173E+01 +/- 0.751E-01 [solar radii]
- c(2) = 0.221E-01 +/- 0.239E-02 [radii/min]
- c(2) = 0.257E+03 +/- 0.277E+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)= 0.78379E-01 [radii] see Bevington pg. 114
- error in c(2)= 0.25865E-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) = 55. +/- 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 13:47 = 0.000E+00 km/sec

The TOTAL velocity at 13:47 = 257. km/sec

The TANGENTIAL velocity at 14: 6 = 0.000E+00 km/sec

The TOTAL velocity at 14: 6 = 257. km/sec

The TANGENTIAL velocity at 14: 7 = 0.000E+00 km/sec

The TOTAL velocity at 14: 7 = 257. km/sec

The TANGENTIAL velocity at 14: 9 = 0.000E+00 km/sec

The TOTAL velocity at 14: 9 = 257. km/sec

The TANGENTIAL velocity at 14:11 = 0.000E+00 km/sec

The TOTAL velocity at 14:11 = 257. km/sec

The TANGENTIAL velocity at 14:25 = 0.000E+00 km/sec

The TOTAL velocity at 14:25 = 257. 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 = 0.111E+02

Error in time = 0.63475E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.335E-02

Reduced Chi Squared = 0.122E-01

Chi Squared = 0.489E-01

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.973E+00

The probability that no LINEAR correlation exists between the variables = 0.1105E-02

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

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

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

year	day	time	radii	error in radius	error in angle	datatype
1980	90	13:47:54	2.00	+/- 0.20	55.0 +/- 0.5	SMM
1980	90	14: 6:20	2.25	+/- 0.15	55.0 +/- 0.5	SMM
1980	90	14: 7:54	2.30	+/- 0.15	55.0 +/- 0.5	SMM
1980	90	14: 9:45	2.40	+/- 0.15	55.0 +/- 0.5	SMM
1980	90	14:11:35	2.40	+/- 0.15	55.0 +/- 0.5	SMM
1980	90	14:25:45	2.80	+/- 0.15	55.0 +/- 0.5	SMM

\*\*\*\*\*

Structure being measured:  
Top of Cavity

\*\*\*\*\*

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

START TIME:

tstart=DOY 90 13:32 from derivative = 0  
Event begins at 1.91 Solar Radii  
Origin defined at DOY 90 13:40

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.117E+00 +/- 0.293E-01 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.194E+01 +/- 0.641E-01 [solar radii]  
c(2) = 0.509E-02 +/- 0.442E-02 [radii/min]  
c(2) = 0.590E+02 +/- 0.512E+02 [km/sec]  
c(3) = 0.304E-03 +/- 0.758E-04 [radii/min\*\*2]  
c(3) = 0.117E+00 +/- 0.293E-01 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.57369E-01 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.51009E-02 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.43500E-02 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.32469E-03 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.79825E-04 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.57076E-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) = 55. +/- 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 13:47 = 0.000E+00 km/sec

The TOTAL velocity at 13:47 = 115. km/sec

The TANGENTIAL velocity at 14: 6 = 0.000E+00 km/sec

The TOTAL velocity at 14: 6 = 245. km/sec

The TANGENTIAL velocity at 14: 7 = 0.000E+00 km/sec

The TOTAL velocity at 14: 7 = 256. km/sec

The TANGENTIAL velocity at 14: 9 = 0.000E+00 km/sec

The TOTAL velocity at 14: 9 = 269. km/sec

The TANGENTIAL velocity at 14:11 = 0.000E+00 km/sec

The TOTAL velocity at 14:11 = 282. km/sec

The TANGENTIAL velocity at 14:25 = 0.000E+00 km/sec

The TOTAL velocity at 14:25 = 381. 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 = 0.111E+02

Value of reduced Chi Squared returned from nllst2 = 0.835E-03

Reduced Chi Squared = 0.346E-02

Chi Squared = 0.104E-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 = 0.8774E+00

The correlation between the data and the time\*\*2 term = 0.9526E+00

The correlation between the data and the complete equation of motion = 0.9894E+00

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