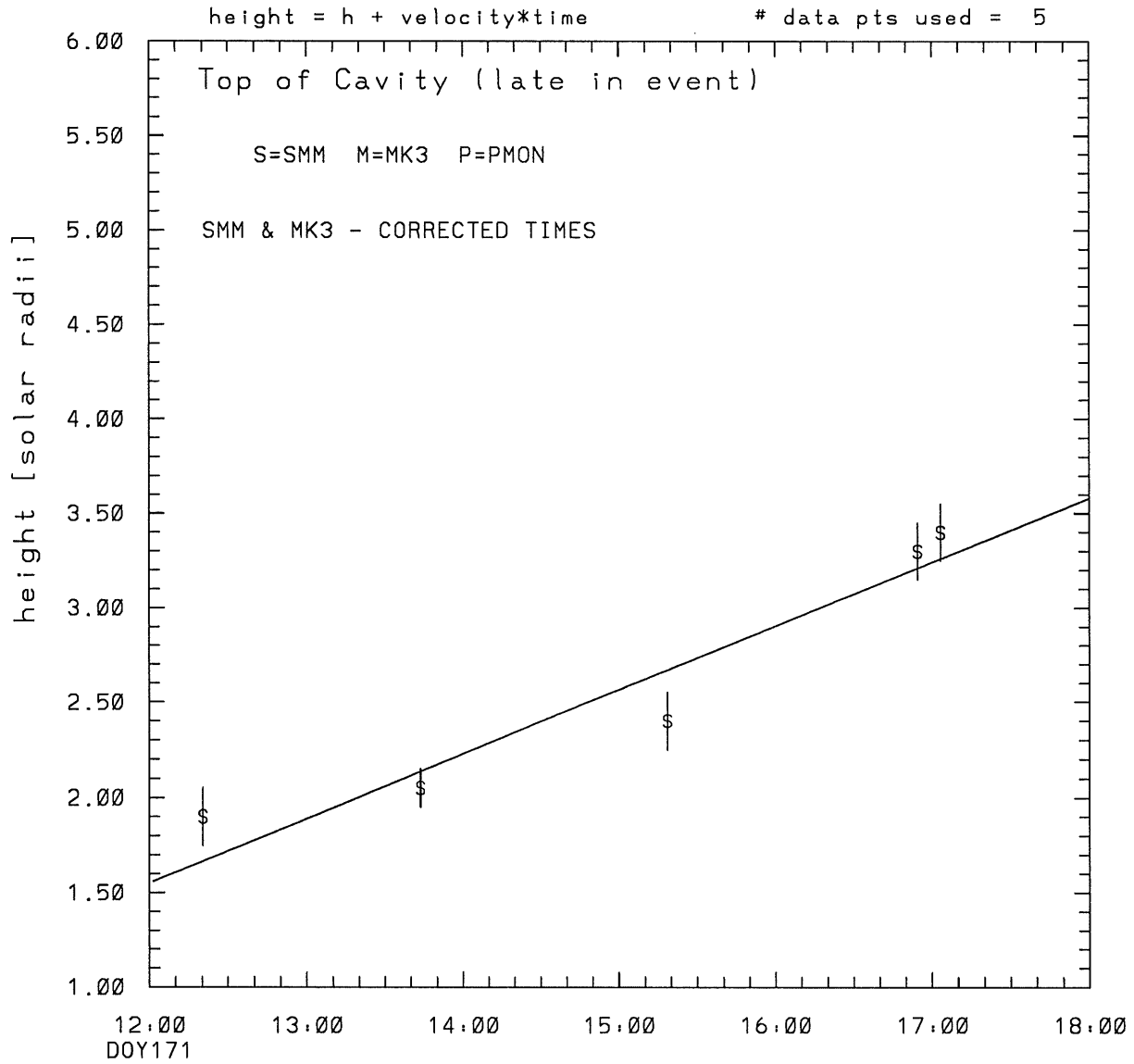
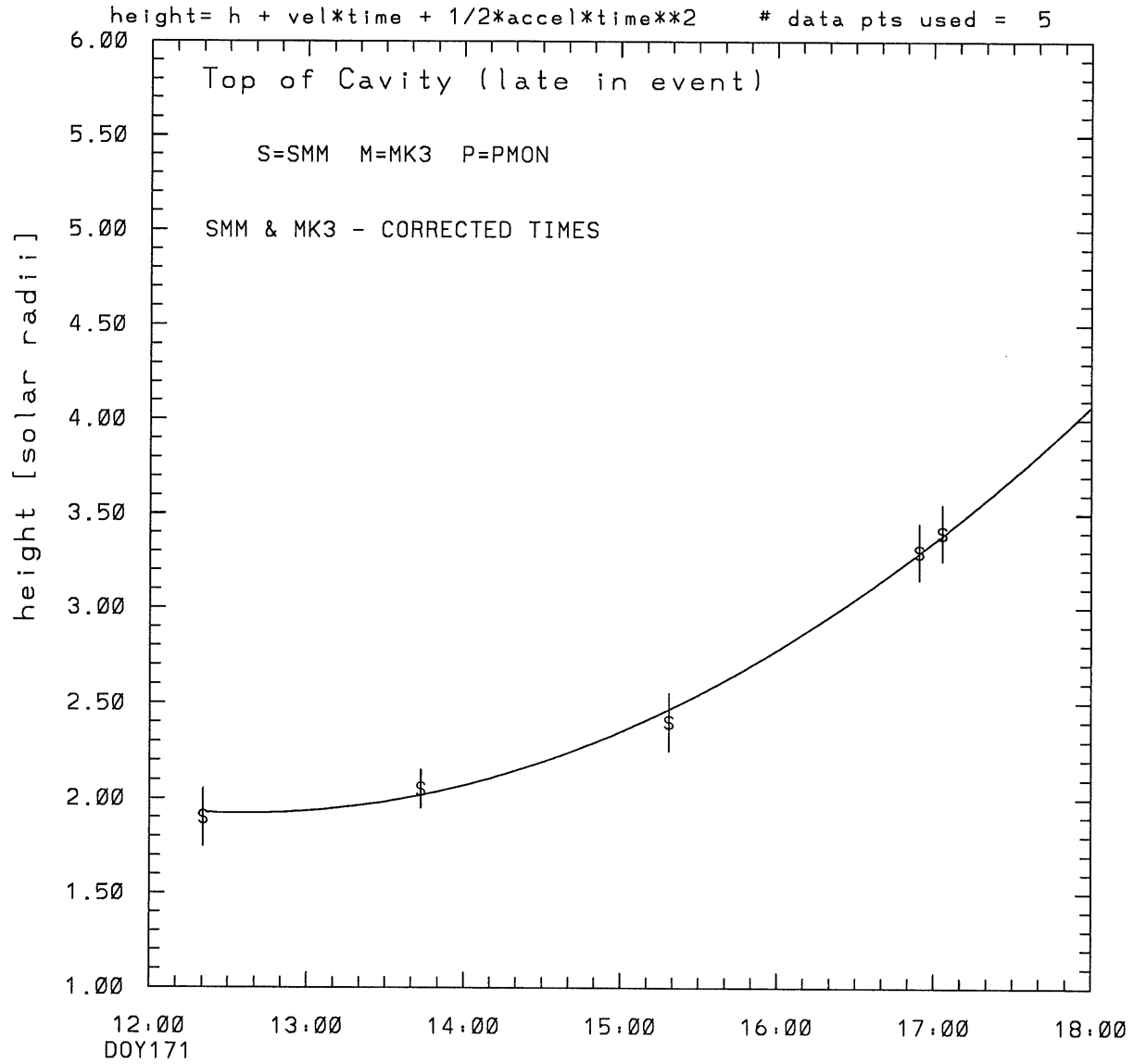


SMM C/P 1980 DOY171 38 +/- 0 degrees



tstart=DOY171 10:24 +/- 6.9 [min.]  
radial velocity= 65. +/- 9. [km/sec]

SMM C/P 1980 DOY171 38 +/- 0 degrees

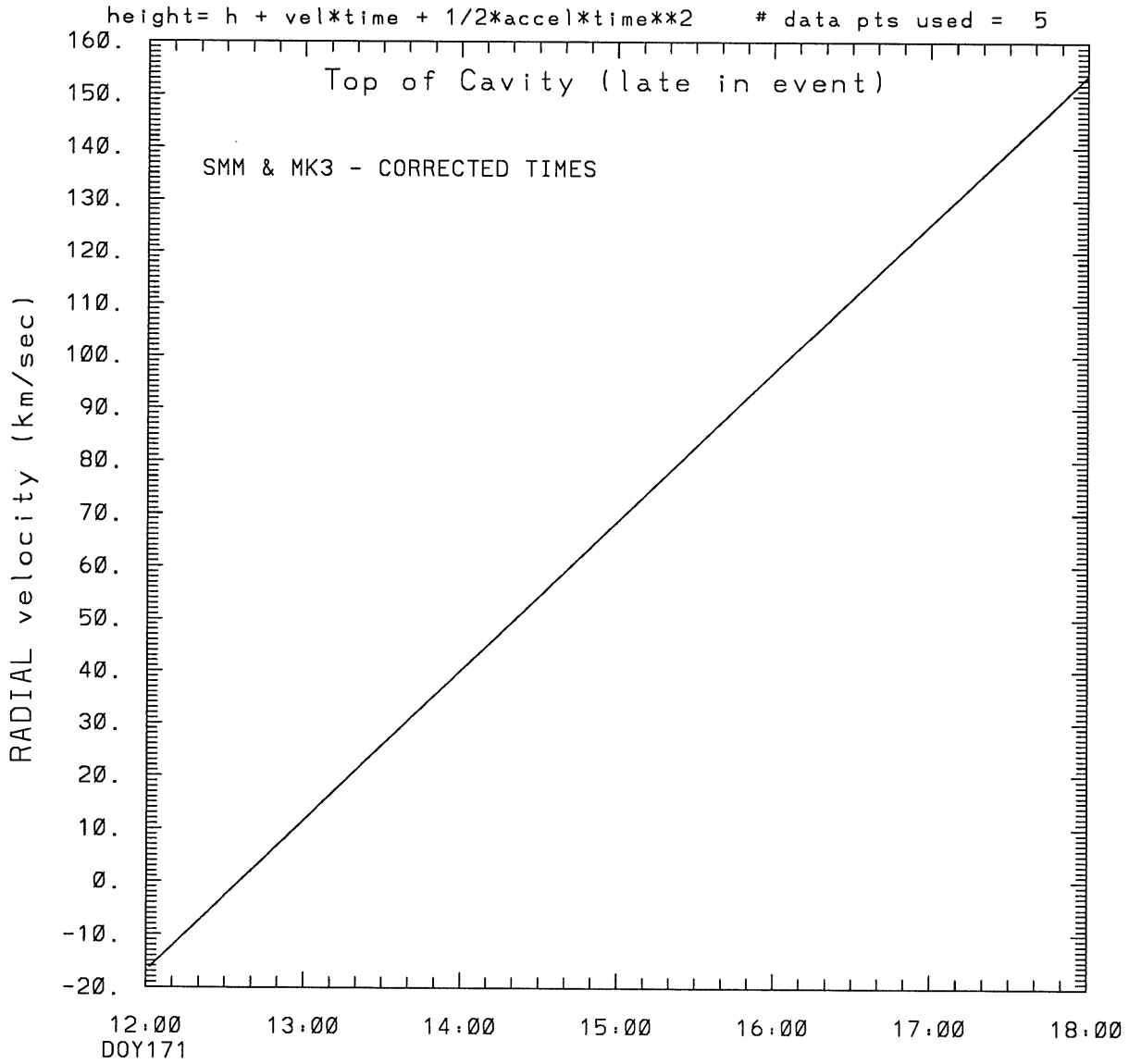


tstart=DOY171 12:35 from derivative=0

Event begins at 1.92 Solar Radii

radial acceleration =  $0.0079 \pm 0.0010$  [km/sec\*\*2]

SMM C/P 1980 DOY171 38 +/- 0 degrees



tstart=DOY171 12:35 from derivative=0  
Event begins at 1.92 Solar Radii  
radial acceleration= $0.790E-02$  km/sec\*\*2

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

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

year	day	time	radii	radius	error in angle	error in angle	datatype
1980	171	12:20:27	1.90 +/-	0.15	38.0 +/-	0.5	SMM
1980	171	13:43:39	2.05 +/-	0.10	38.0 +/-	0.5	SMM
1980	171	15:18:39	2.40 +/-	0.15	38.2 +/-	0.5	SMM
1980	171	16:54:28	3.30 +/-	0.15	38.0 +/-	1.0	SMM
1980	171	17: 3:16	3.40 +/-	0.15	38.2 +/-	1.0	SMM

\*\*\*\*\*  
Structure being measured:  
Top of Cavity (late in event)  
\*\*\*\*\*

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

START TIME:

Event began at t = 0 + -0.980E+02 +/- 0.692E+01 [minutes]  
In more convenient units:  
Event began at DOY 171 10:24 +/- 0.692E+01 [minutes]

Origin defined at DOY171 12: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 65. +/- 9. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.155E+01 +/- 0.159E+00 [solar radii]  
c(2) = 0.563E-02 +/- 0.805E-03 [radii/min]  
c(2) = 0.653E+02 +/- 0.933E+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)= 0.20378E+00 [radii] see Bevington pg. 114  
error in c(2)= 0.95156E-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) = 38. +/- 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 12:20 = 65. km/sec

The RADIAL velocity at 13:43 = 65. km/sec

The RADIAL velocity at 15:18 = 65. km/sec

The RADIAL velocity at 16:54 = 65. km/sec

The RADIAL velocity at 17: 3 = 65. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.70  
Standard Deviation in start time measurement = 0.109E+03  
Error in time = 0.71585E+02 using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.343E-01  
Reduced Chi Squared = 0.140E+00  
Chi Squared = 0.419E+00  
The probability for exceeding chi square = 0.991E+00

The correlation coefficient = 0.959E+00  
The probability that no LINEAR correlation exists between the variables = 0.1004)  
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
1980	171	12:20:27	1.90 +/-	0.15	38.0 +/-	0.5	SMM
1980	171	13:43:39	2.05 +/-	0.10	38.0 +/-	0.5	SMM
1980	171	15:18:39	2.40 +/-	0.15	38.2 +/-	0.5	SMM
1980	171	16:54:28	3.30 +/-	0.15	38.0 +/-	1.0	SMM
1980	171	17: 3:16	3.40 +/-	0.15	38.2 +/-	1.0	SMM

\*\*\*\*\*  
Structure being measured:  
Top of Cavity (late in event)  
\*\*\*\*\*

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

START TIME:

tstart=DOY171 12:35 from derivative = 0  
Event begins at 1.92 Solar Radii  
Origin defined at DOY171 12: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.790E-02 +/- 0.991E-03 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.195E+01 +/- 0.632E-01 [solar radii]  
c(2) = -0.145E-02 +/- 0.911E-03 [radii/min]  
c(2) = -0.169E+02 +/- 0.106E+02 [km/sec]  
c(3) = 0.204E-04 +/- 0.256E-05 [radii/min\*\*2]  
c(3) = 0.790E-02 +/- 0.991E-03 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.70503E-01 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.25753E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.10688E-02 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.48063E-03 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.30955E-05 [radii/min\*\*2] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.13978E-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) = 38. +/- 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 12:20 = -7. km/sec

The RADIAL velocity at 13:43 = 32. km/sec

The RADIAL velocity at 15:18 = 77. km/sec

The RADIAL velocity at 16:54 = 123. km/sec

The RADIAL velocity at 17: 3 = 127. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.70

Standard Deviation in start time measurement = 0.109E+03

Value of reduced Chi Squared returned from nllst2 = 0.206E-02

Reduced Chi Squared = 0.854E-02

Chi Squared = 0.171E-01

The probability for exceeding chi square = 0.998E+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 = 0.9170E+00

The correlation between the data and the time\*\*2 term = 0.9833E+00

The correlation between the data and the complete equation of motion=0.9991E+00

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