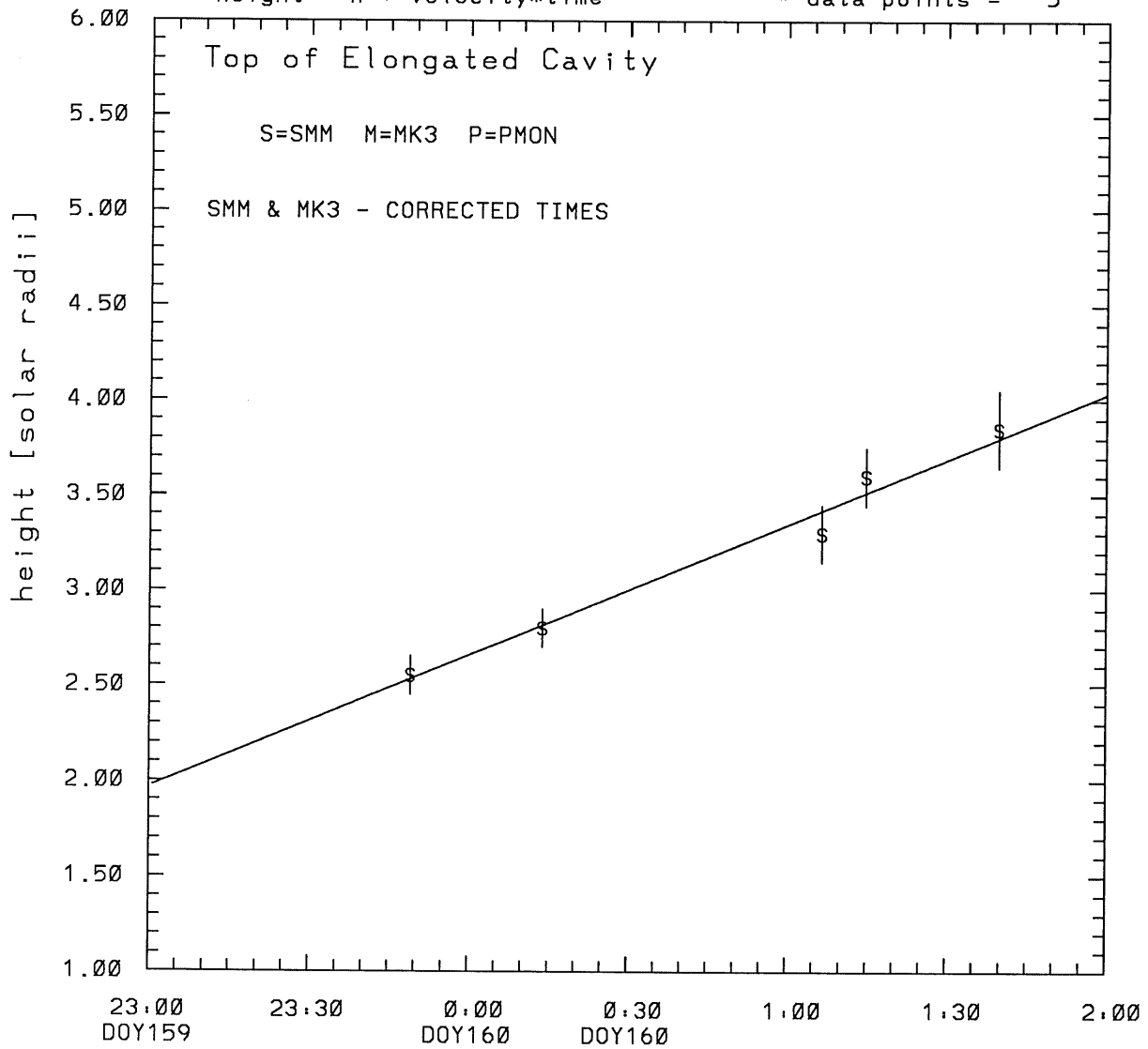


SMM C/P 1988 DOY159 75 +/- 0 degrees

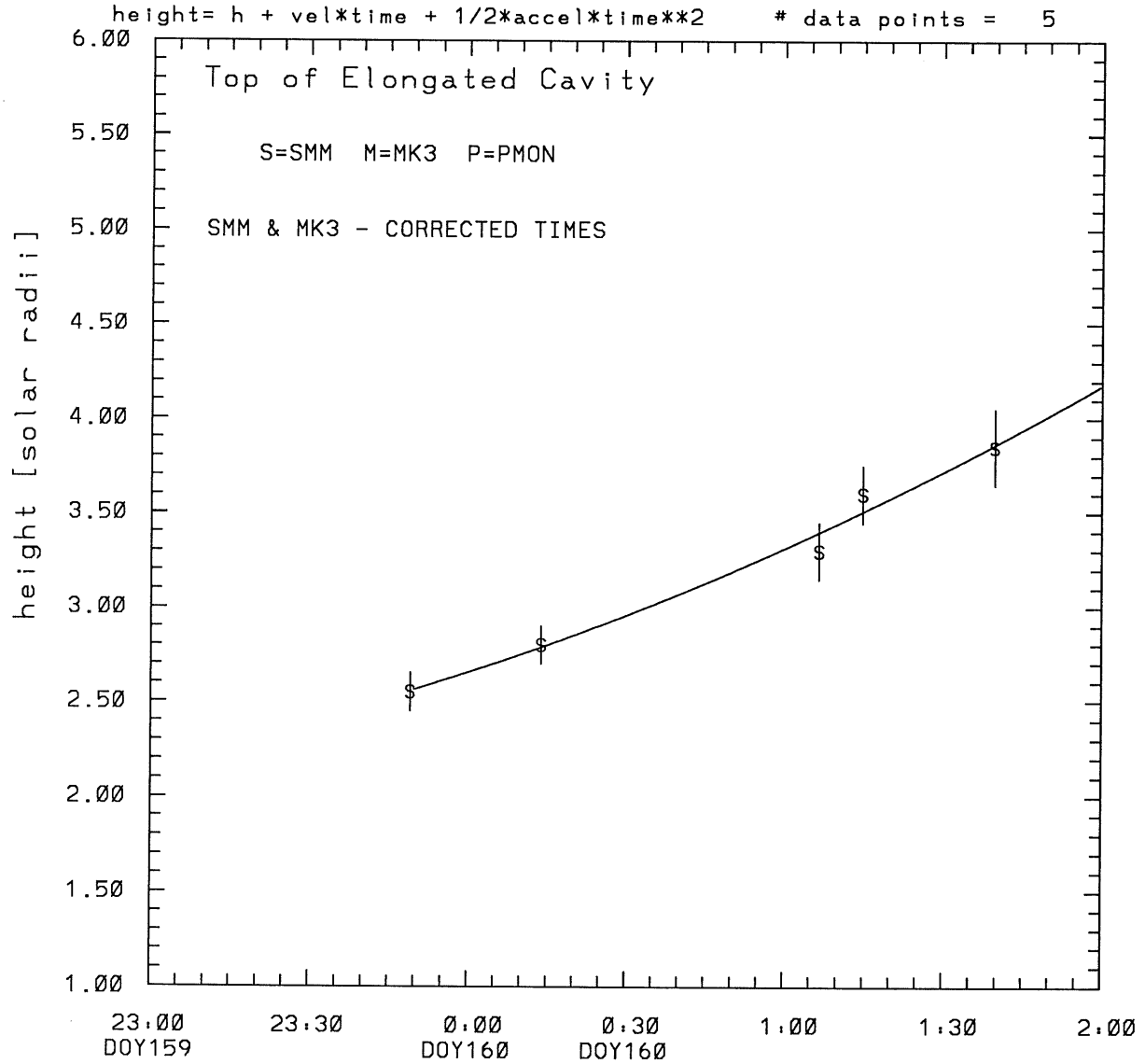
height = h + velocity\*time

# data points = 5



tstart=DOY159 21:36 +/- 2.0 [min.]  
radial velocity= 133. +/- 9. [km/sec]

SMM C/P 1988 DOY159 75 +/- 0 degrees

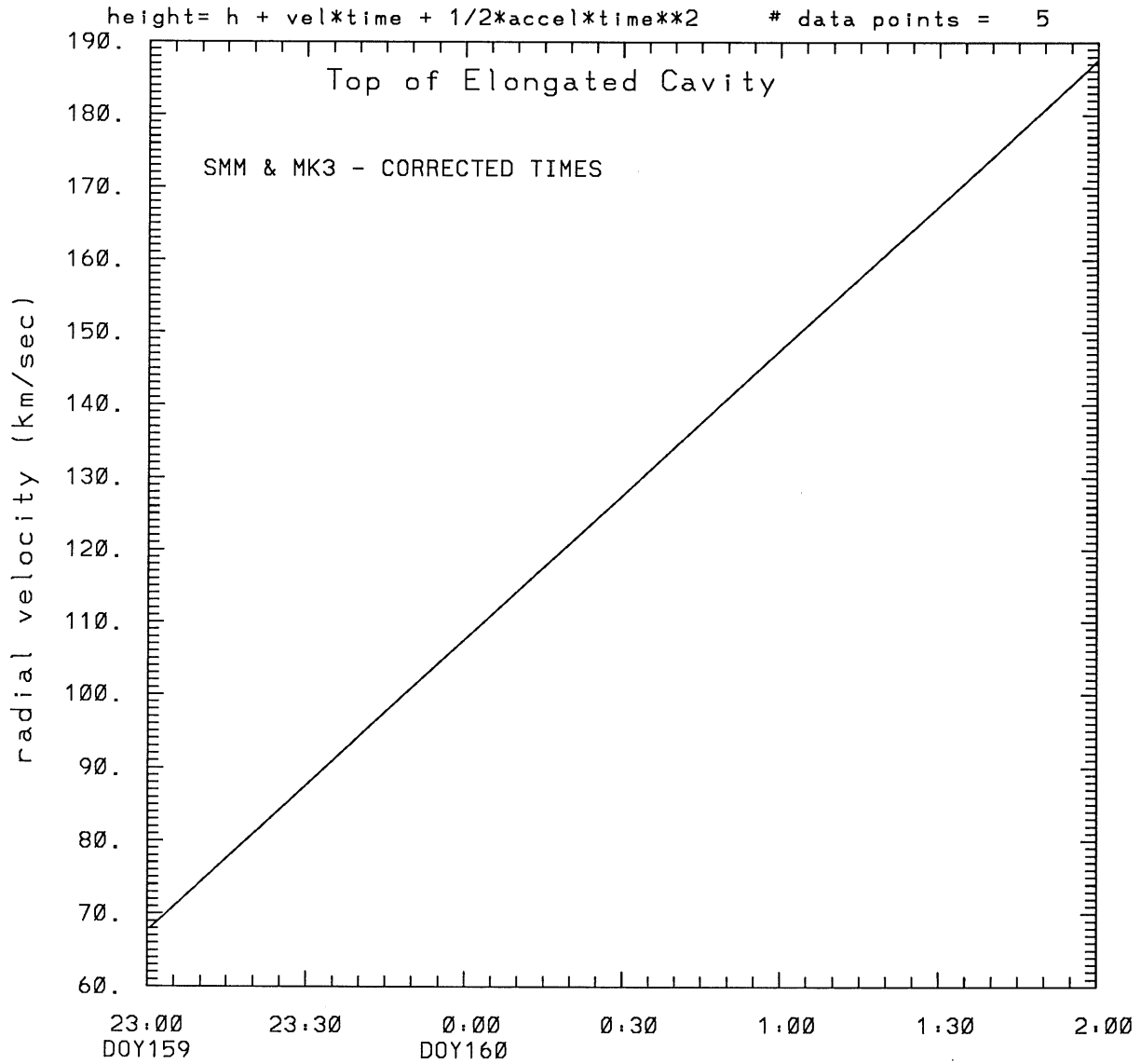


tstart=DOY159 21:19 from derivative=0

Event begins at 1.90 Solar Radii

radial acceleration = 0.0111 +/- 0.0114 [km/sec\*\*2]

SMM C/P 1988 DOY159 75 +/- 0 degrees



tstart=DOY159 21:19 from derivative=0  
Event begins at 1.90 Solar Radii  
radial acceleration=0.111E-01 km/sec\*\*2

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

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

year	day	time	radii	error in radius	angle	error in angle	datatype
1988	159	23:49: 8	2.55	+/- 0.10	75.0	+/- 0.5	SMM
1988	160	0:13:53	2.80	+/- 0.10	75.0	+/- 0.5	SMM
1988	160	1: 6:41	3.30	+/- 0.15	75.0	+/- 1.0	SMM
1988	160	1:14:55	3.60	+/- 0.15	75.0	+/- 1.0	SMM
1988	160	1:39:43	3.85	+/- 0.20	75.0	+/- 1.0	SMM

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

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

START TIME:

Event began at  $t = 0 + -0.841E+02 +/- 0.200E+01$  [minutes]  
In more convenient units:  
Event began at DOY 159 21:36 +/- 0.200E+01 [minutes]

Origin defined at DOY159 23: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 133. +/- 9. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.197E+01 +/- 0.743E-01$  [solar radii]  
 $c(2) = 0.115E-01 +/- 0.766E-03$  [radii/min]  
 $c(2) = 0.133E+03 +/- 0.889E+01$  [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  $c(1) = 0.11558E+00$  [radii] see Bevington pg. 114  
error in  $c(2) = 0.99376E-03$  [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) = 75. +/- 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 23:49 = 0. km/sec

The TOTAL velocity at 23:49 = 133. km/sec

The TANGENTIAL velocity at 0:13 = 0. km/sec

The TOTAL velocity at 0:13 = 133. km/sec

The TANGENTIAL velocity at 1: 6 = 0. km/sec

The TOTAL velocity at 1: 6 = 133. km/sec

The TANGENTIAL velocity at 1:14 = 0. km/sec

The TOTAL velocity at 1:14 = 133. km/sec

The TANGENTIAL velocity at 1:39 = 0. km/sec

The TOTAL velocity at 1:39 = 133. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.54

Standard Deviation in start time measurement = 0.409E+02

Error in time = 0.13711E+02 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.434E-02

Reduced Chi Squared = 0.284E-01

Chi Squared = 0.853E-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 = 0.1276E-02

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

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

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

year	doy	time	radii	error in radius	error in angle	datatype
1988	159	23:49: 8	2.55	+/- 0.10	75.0 +/- 0.5	SMM
1988	160	0:13:53	2.80	+/- 0.10	75.0 +/- 0.5	SMM
1988	160	1: 6:41	3.30	+/- 0.15	75.0 +/- 1.0	SMM
1988	160	1:14:55	3.60	+/- 0.15	75.0 +/- 1.0	SMM
1988	160	1:39:43	3.85	+/- 0.20	75.0 +/- 1.0	SMM

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

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

START TIME:

tstart=DOY159 21:19 from derivative = 0  
Event begins at 1.90 Solar Radii  
Origin defined at DOY159 23: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.111E-01 +/- 0.114E-01 km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.220E+01 +/- 0.252E+00 [solar radii]  
c(2) = 0.583E-02 +/- 0.588E-02 [radii/min]  
c(2) = 0.676E+02 +/- 0.682E+02 [km/sec]  
c(3) = 0.287E-04 +/- 0.296E-04 [radii/min\*\*2]  
c(3) = 0.111E-01 +/- 0.114E-01 [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.36253E+00 [radii] Bevington pg 154 (8-30)  
Exact error in c(1) = 0.36735E-01 [radii] Bevington pg 154 (8-28)  
Approximate error in c(2) = 0.79897E-02 [radii/min] Bevington pg 154 (8-30)  
Exact error in c(2) = 0.93214E-03 [radii/min] Bevington pg 154 (8-28)  
Approximate error in c(3) = 0.38512E-04 [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in c(3) = 0.44821E-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) = 75. +/- 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 23:49 = 0. km/sec

The TOTAL velocity at 23:49 = 100. km/sec

The TANGENTIAL velocity at 0:13 = 0. km/sec

The TOTAL velocity at 0:13 = 117. km/sec

The TANGENTIAL velocity at 1: 6 = 0. km/sec

The TOTAL velocity at 1: 6 = 152. km/sec

The TANGENTIAL velocity at 1:14 = 0. km/sec

The TOTAL velocity at 1:14 = 157. km/sec

The TANGENTIAL velocity at 1:39 = 0. km/sec

The TOTAL velocity at 1:39 = 174. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.54

Standard Deviation in start time measurement = 0.409E+02

Value of reduced Chi Squared returned from nllst2 = 0.440E-02

Reduced Chi Squared = 0.319E-01

Chi Squared = 0.639E-01

The probability for exceeding chi square = 0.996E+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 = 0.1050E+01

The correlation between the data and the time\*\*2 term = 0.1016E+01

The correlation between the data and the complete equation of motion = 0.9922E+00

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