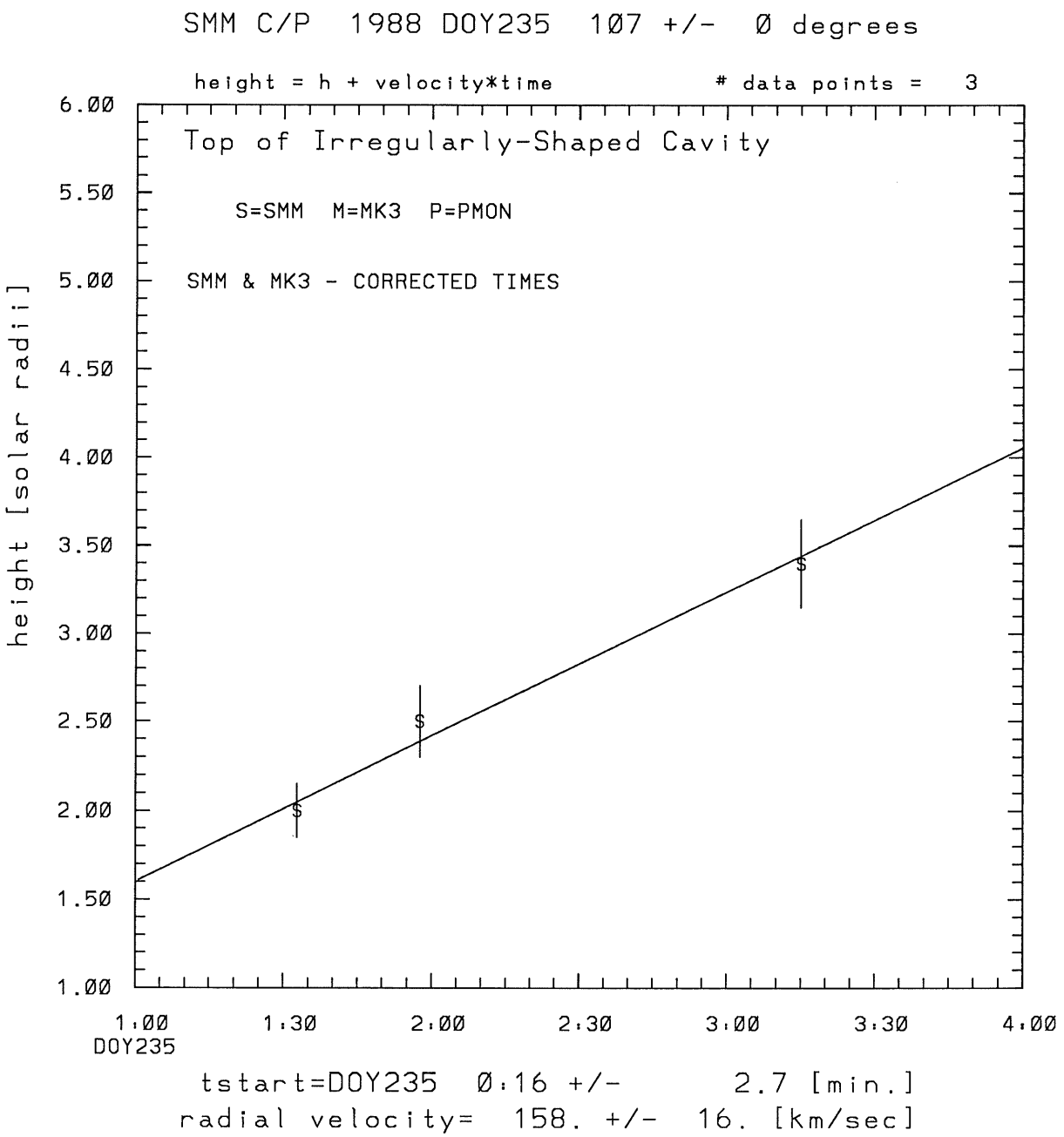
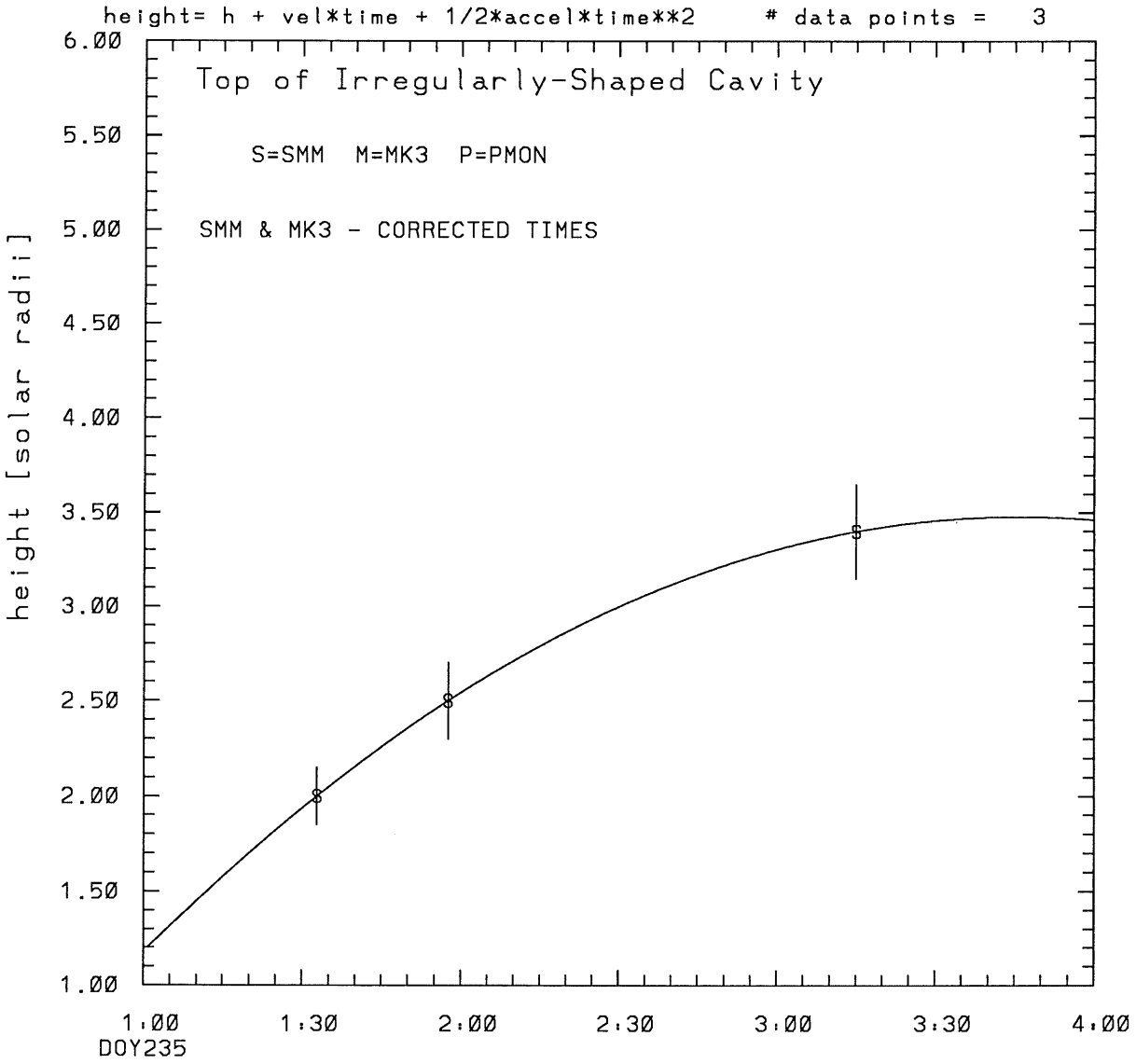
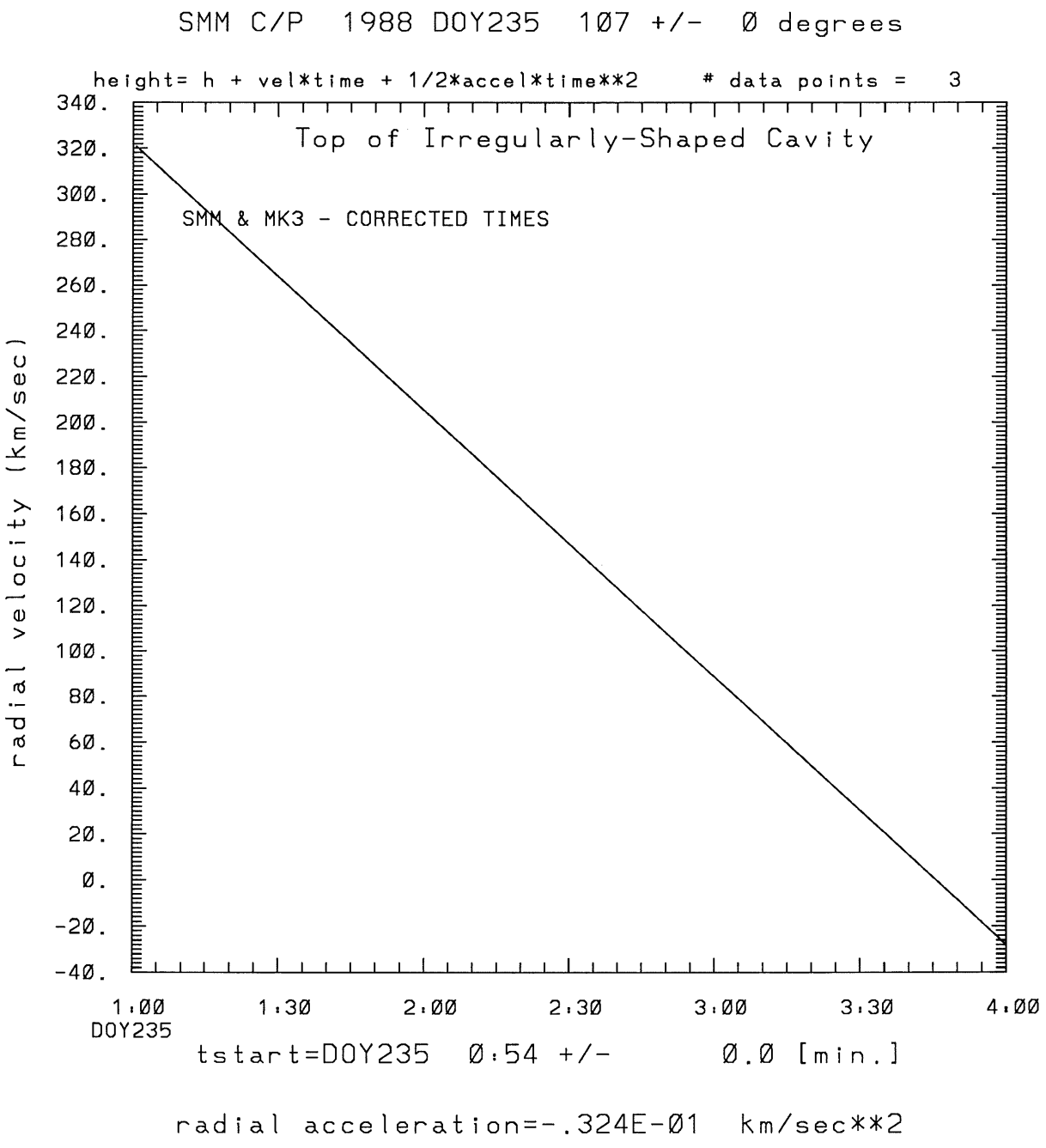

SMM C/P 1988 DOY235 107 +/- 0 degrees
height = h + velocity*time
# data points = 3
Top of Irregularly-Shaped Cavity
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
1:00
DOY235
1:30
2:00
2:30
3:00
3:30
4:00
tstart=DOY235 0:16 +/- 2.7 [min.]
radial velocity= 158. +/- 16. [km/sec]

SMM C/P 1988 DOY235 107 +/- 0 degrees



tstart=DOY235 0:54 +/- 0.0 [min.]

radial acceleration=-0.0324 +/- 0.0000 [km/sec**2]


SMM C/P 1988 DOY235 107 +/- 0 degrees
height= h + vel*time + 1/2*accel*time**2 # data points = 3
Top of Irregularly-Shaped Cavity
SMM & MK3 - CORRECTED TIMES
radial velocity (km/sec)
340.
320.
300.
280.
260.
240.
220.
200.
180.
160.
140.
120.
100.
80.
60.
40.
20.
0.
-20.
-40.
1:00
DOY235
1:30
2:00
2:30
3:00
3:30
4:00
tstart=DOY235 0:54 +/- 0.0 [min.]
radial acceleration=-.324E-01 km/sec**2

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

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1988	235	1:32:50	2.00	+/- 0.15	107.0	+/- 1.0	SMM
1988	235	1:57:36	2.50	+/- 0.20	107.0	+/- 1.0	SMM
1988	235	3:15: 6	3.40	+/- 0.25	107.0	+/- 1.0	SMM

****
Structure being measured:
Top of Irregularly-Shaped Cavity
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.441E+02 +/- 0.266E+01 [minutes]
In more convenient units:
Event began at DOY 235 0:16 +/- 0.266E+01 [minutes]

Origin defined at DOY235 1: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 158. +/- 16. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.160E+01 +/- 0.959E-01 [solar radii]
c(2) = 0.136E-01 +/- 0.136E-02 [radii/min]
c(2) = 0.158E+03 +/- 0.158E+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)= 0.15081E+00 [radii] see Bevington pg. 114
error in c(2)= 0.17357E-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) = 107. +/- 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 1:32 = 0. km/sec
The TOTAL velocity at 1:32 = 158. km/sec

The TANGENTIAL velocity at 1:57 = 0. km/sec
The TOTAL velocity at 1:57 = 158. km/sec

The TANGENTIAL velocity at 3:15 = 0. km/sec
The TOTAL velocity at 3:15 = 158. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.71
Standard Deviation in start time measurement = 0.436E+02
Error in time = 0.96035E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.804E-02
Reduced Chi Squared = 0.338E-01
Chi Squared = 0.338E-01
The probability for exceeding chi square = 0.929E+00

The correlation coefficient = 0.992E+00
The probability that no LINEAR correlation exists between the variables = 0.8013E-01
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

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

****
INPUT:
****

year doy	time	radii	error in radius	angle	error in angle	datatype
1988 235	1:32:50	2.00	+/- 0.15	107.0	+/- 1.0	SMM
1988 235	1:57:36	2.50	+/- 0.20	107.0	+/- 1.0	SMM
1988 235	3:15: 6	3.40	+/- 0.25	107.0	+/- 1.0	SMM

****
Structure being measured:
Top of Irregularly-Shaped Cavity
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.631E+01 +/- 0.000E+00 [minutes]
In more convenient units:
Event began at DOY 235 0:54 +/- 0.000E+00 [minutes]

Origin defined at DOY235 1: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = -0.324E-01 +/- 0.862E-07 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.118E+01 +/- 0.118E-05 [solar radii]
c(2) = 0.278E-01 +/- 0.379E-07 [radii/min]
c(2) = 0.322E+03 +/- 0.440E-03 [km/sec]
c(3) = -0.839E-04 +/- 0.223E-09 [radii/min**2]
c(3) = -0.324E-01 +/- 0.862E-07 [km/sec**2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/- 0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 107. +/- 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 1:32 = 0. km/sec
The TOTAL velocity at 1:32 = 258. km/sec

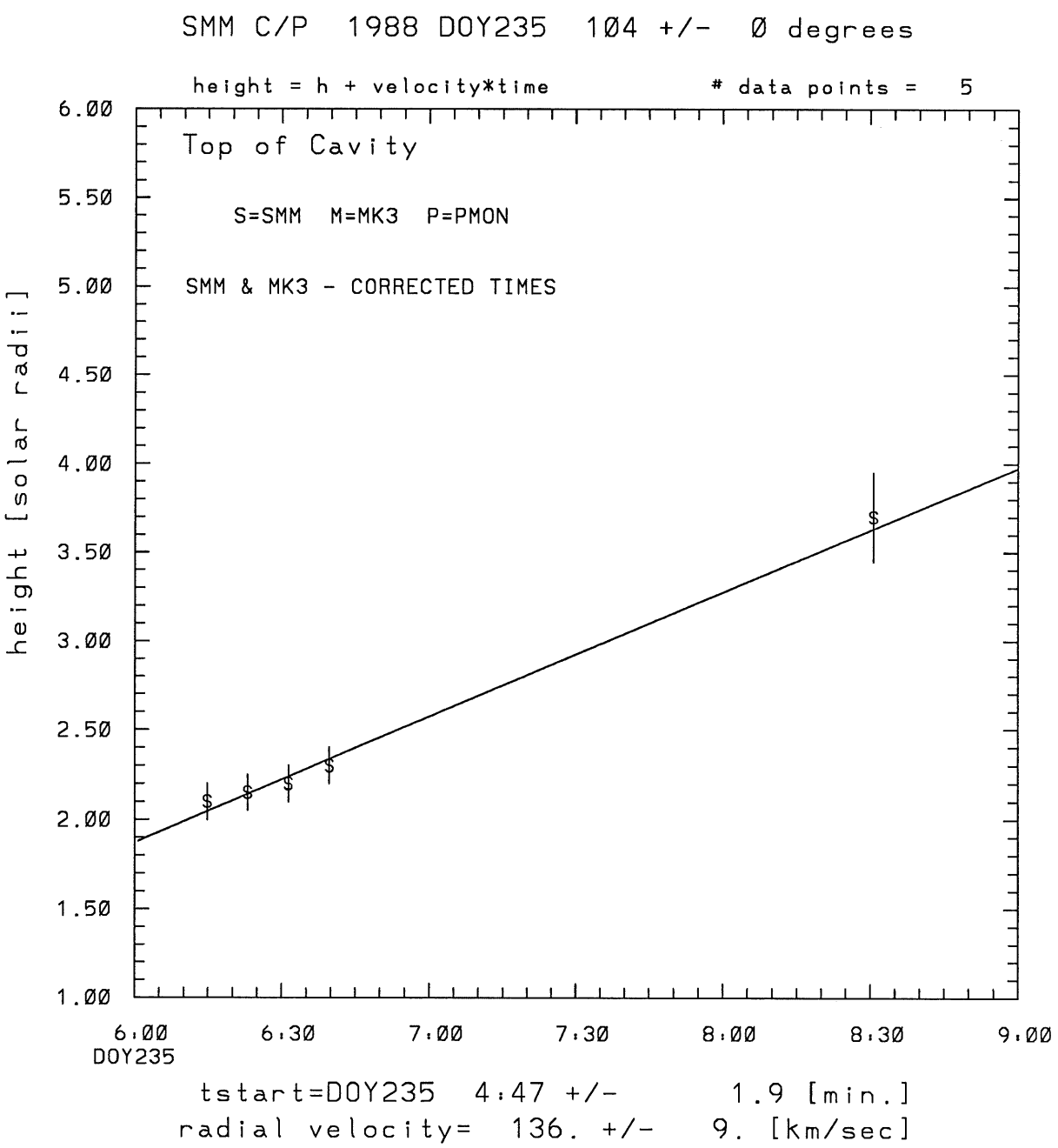
The TANGENTIAL velocity at 1:57 = 0. km/sec
The TOTAL velocity at 1:57 = 210. km/sec

The TANGENTIAL velocity at 3:15 = 0. km/sec
The TOTAL velocity at 3:15 = 59. km/sec

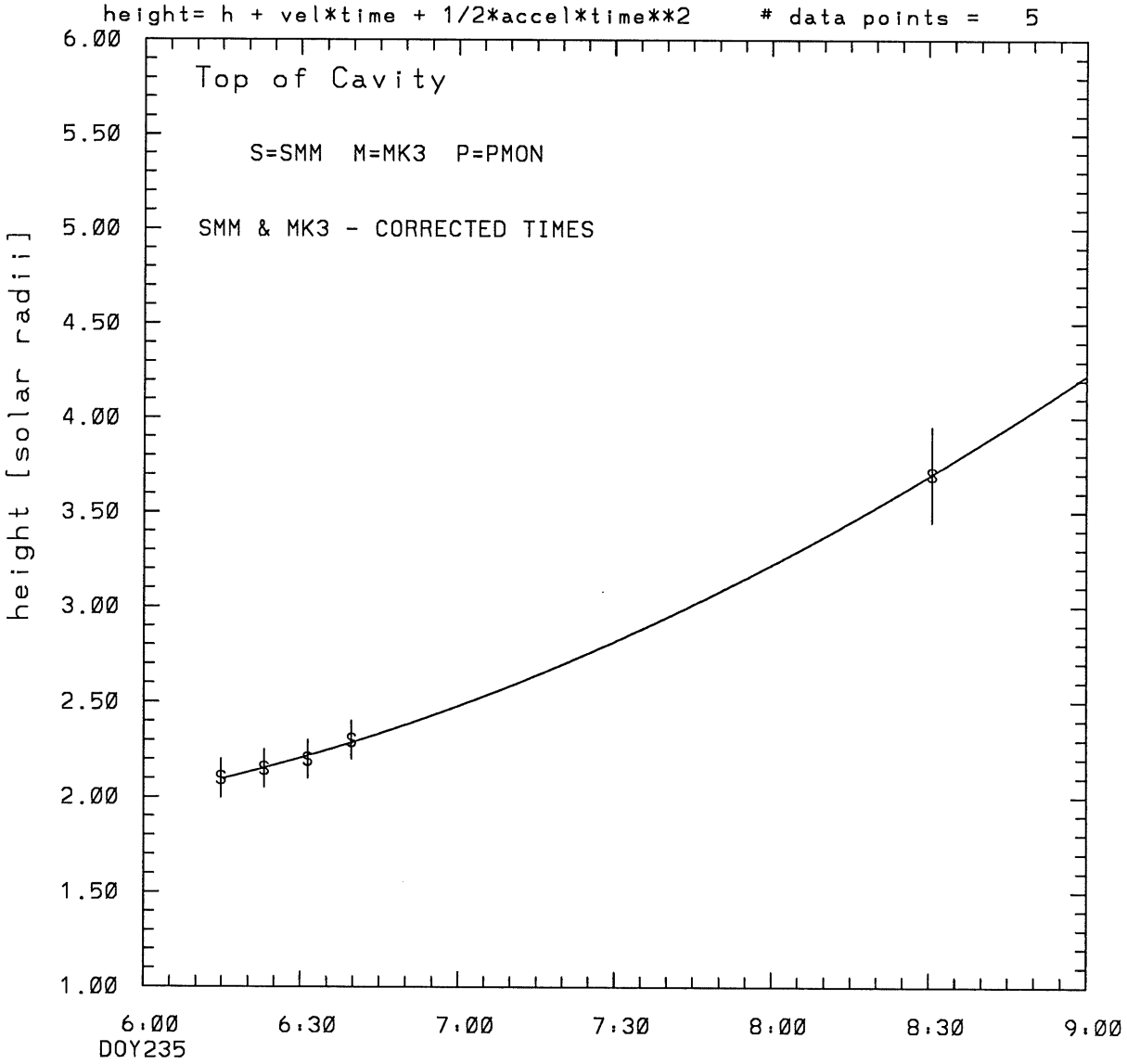
****
The following info is for estimating goodness of the fit
****

Number data points = number of coefficients. No error analysis is possible.

Correlation coefficient is not computable!


SMM C/P 1988 DOY235 104 +/- 0 degrees
height = h + velocity*time
# data points = 5
Top of Cavity
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
6:00
DOY235
6:30
7:00
7:30
8:00
8:30
9:00
tstart=DOY235 4:47 +/- 1.9 [min.]
radial velocity= 136. +/- 9. [km/sec]

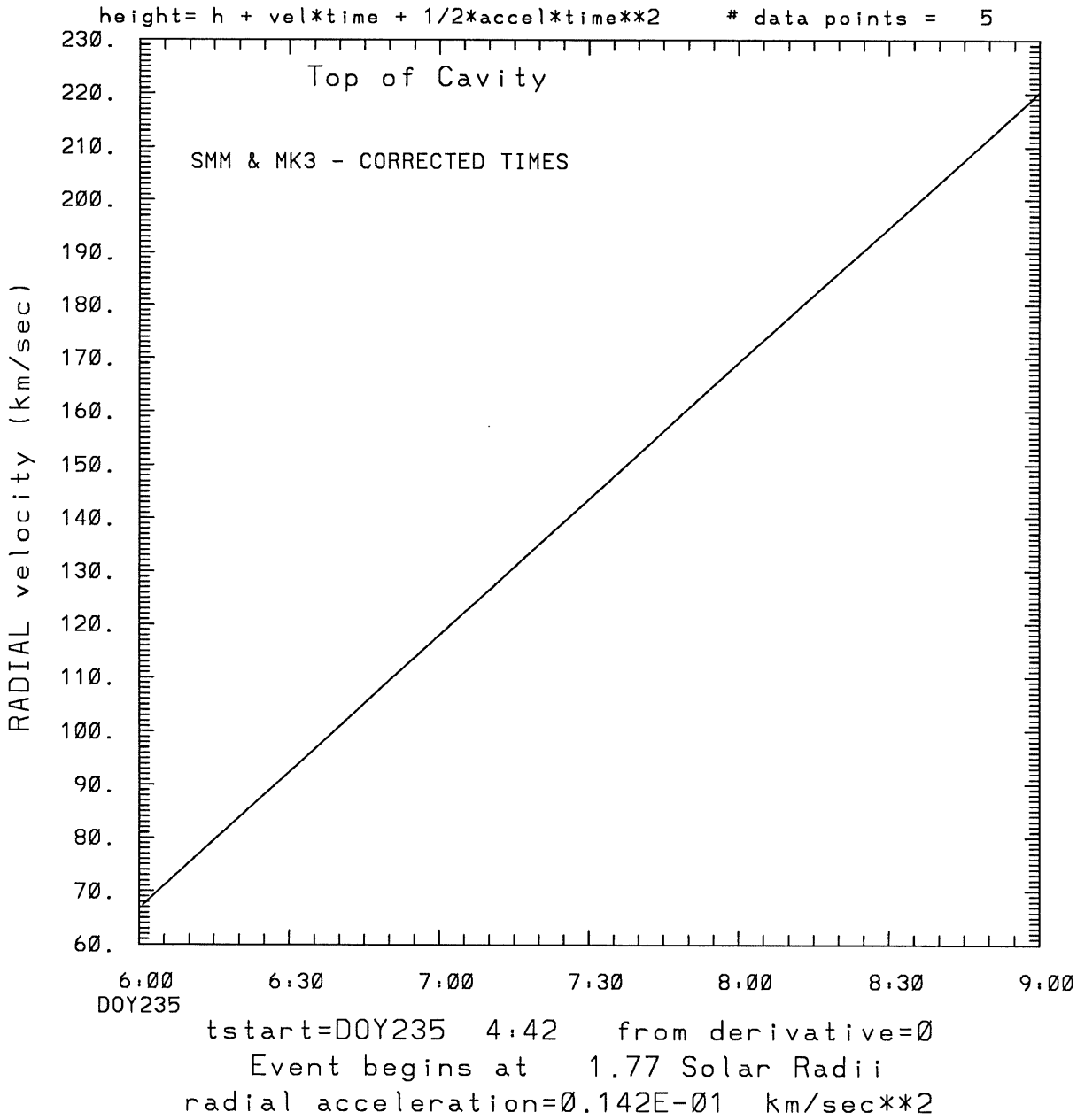
SMM C/P 1988 DOY235 104 +/- 0 degrees



tstart=DOY235 4:42 from derivative=0

Event begins at 1.77 Solar Radii

radial acceleration= 0.0142 +/- 0.0024 [km/sec**2]


SMM C/P 1988 DOY235 104 +/- 0 degrees
height= h + vel*time + 1/2*accel*time**2 # data points = 5
Top of Cavity
SMM & MK3 - CORRECTED TIMES
RADIAL velocity (km/sec)
230.
220.
210.
200.
190.
180.
170.
160.
150.
140.
130.
120.
110.
100.
90.
80.
70.
60.
6:00
DOY235
6:30
7:00
7:30
8:00
8:30
9:00
tstart=DOY235 4:42 from derivative=0
Event begins at 1.77 Solar Radii
radial acceleration=0.142E-01 km/sec**2

```
**********************
 This is a 1 order run
**********************

*******
 INPUT:
*******

                                   error in          error in
year doy    time      radii   radius      angle    angle    datatype
1988 235   6:14:48   2.10 +/- 0.10    104.0 +/-  0.5        SMM
1988 235   6:23: 1   2.15 +/- 0.10    104.0 +/-  0.5        SMM
1988 235   6:31:22   2.20 +/- 0.10    104.0 +/-  0.5        SMM
1988 235   6:39:43   2.30 +/- 0.10    104.0 +/-  0.5        SMM
1988 235   8:30:37   3.70 +/- 0.25    104.0 +/-  1.0        SMM

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

********
 OUTPUT:
********

START TIME:

 Event began at t = 0 + -0.746E+02 +/-  0.195E+01 [minutes]
 In more convenient units:
 Event began at DOY 235  4:47 +/-  0.195E+01 [minutes]

 Origin defined at DOY235  6: 0

RADIAL INFORMATION:

RADIAL VELOCITY =   136. +/-     9. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

 c(1) =    0.187E+01 +/-    0.321E-01 [solar radii]
 c(2) =    0.117E-01 +/-    0.786E-03 [radii/min]
 c(2) =    0.136E+03 +/-    0.912E+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)=  0.38068E-01 [radii] see Bevington pg. 114
                   error in c(2)=  0.52795E-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) = 104. +/-   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  6:14 =  136. km/sec

The RADIAL velocity at  6:23 =  136. km/sec

The RADIAL velocity at  6:31 =  136. km/sec
```

The RADIAL velocity at 6:39 = 136. km/sec

The RADIAL velocity at 8:30 = 136. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.68
Standard Deviation in start time measurement = 0.501E+02
Error in time = 0.87560E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.200E-02
Reduced Chi Squared = 0.119E-01
Chi Squared = 0.357E-01
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.998E+00
The probability that no LINEAR correlation exists between the variables = 0.1057
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

```
**********************
 This is a 2 order run
**********************

*******
 INPUT:
*******

                                    error in          error in
year doy    time      radii    radius      angle    angle     datatype
1988 235   6:14:48   2.10 +/- 0.10     104.0 +/-  0.5         SMM
1988 235   6:23: 1   2.15 +/- 0.10     104.0 +/-  0.5         SMM
1988 235   6:31:22   2.20 +/- 0.10     104.0 +/-  0.5         SMM
1988 235   6:39:43   2.30 +/- 0.10     104.0 +/-  0.5         SMM
1988 235   8:30:37   3.70 +/- 0.25     104.0 +/-  1.0         SMM

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

********
 OUTPUT:
********

START TIME:

 tstart=DOY235  4:42 from derivative = 0
Event begins at   1.77 Solar Radii
 Origin defined at DOY235  6: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  0.142E-01 +/-  0.236E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

 c(1) =    0.200E+01 +/-    0.237E-01 [solar radii]
 c(2) =    0.576E-02 +/-    0.102E-02 [radii/min]
 c(2) =    0.668E+02 +/-    0.118E+02 [km/sec]
 c(3) =    0.367E-04 +/-    0.611E-05 [radii/min**2]
 c(3) =    0.142E-01 +/-    0.236E-02 [km/sec**2]

 The computed ERRORS in coefficients [BEVINGTON] are:

    Approximate error in c(1) =  0.28964E-01 [radii] Bevington pg 154 (8-30)
          Exact error in c(1) =  0.10610E-01 [radii] Bevington pg 154 (8-28)
    Approximate error in c(2) =  0.12400E-02 [radii/min] Bevington pg 154 (8-30)
          Exact error in c(2) =  0.53533E-03 [radii/min] Bevington pg 154 (8-28)
    Approximate error in c(3) =  0.70891E-05 [radii/min**2] Bevington pg 154 (8-30)
          Exact error in c(3) =  0.30925E-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) = 104. +/-   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  6:14 =   79. km/sec
```

The RADIAL velocity at 6:23 = 86. km/sec

The RADIAL velocity at 6:31 = 94. km/sec

The RADIAL velocity at 6:39 = 101. km/sec

The RADIAL velocity at 8:30 = 195. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.68
Standard Deviation in start time measurement = 0.501E+02
Value of reduced Chi Squared returned from nllst2 = 0.204E-03
Reduced Chi Squared = 0.806E-03
Chi Squared = 0.161E-02
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 = 0.6417E+00
The correlation between the data and the time**2 term = 0.6266E+00
The correlation between the data and the complete equation of motion=0.9995E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]