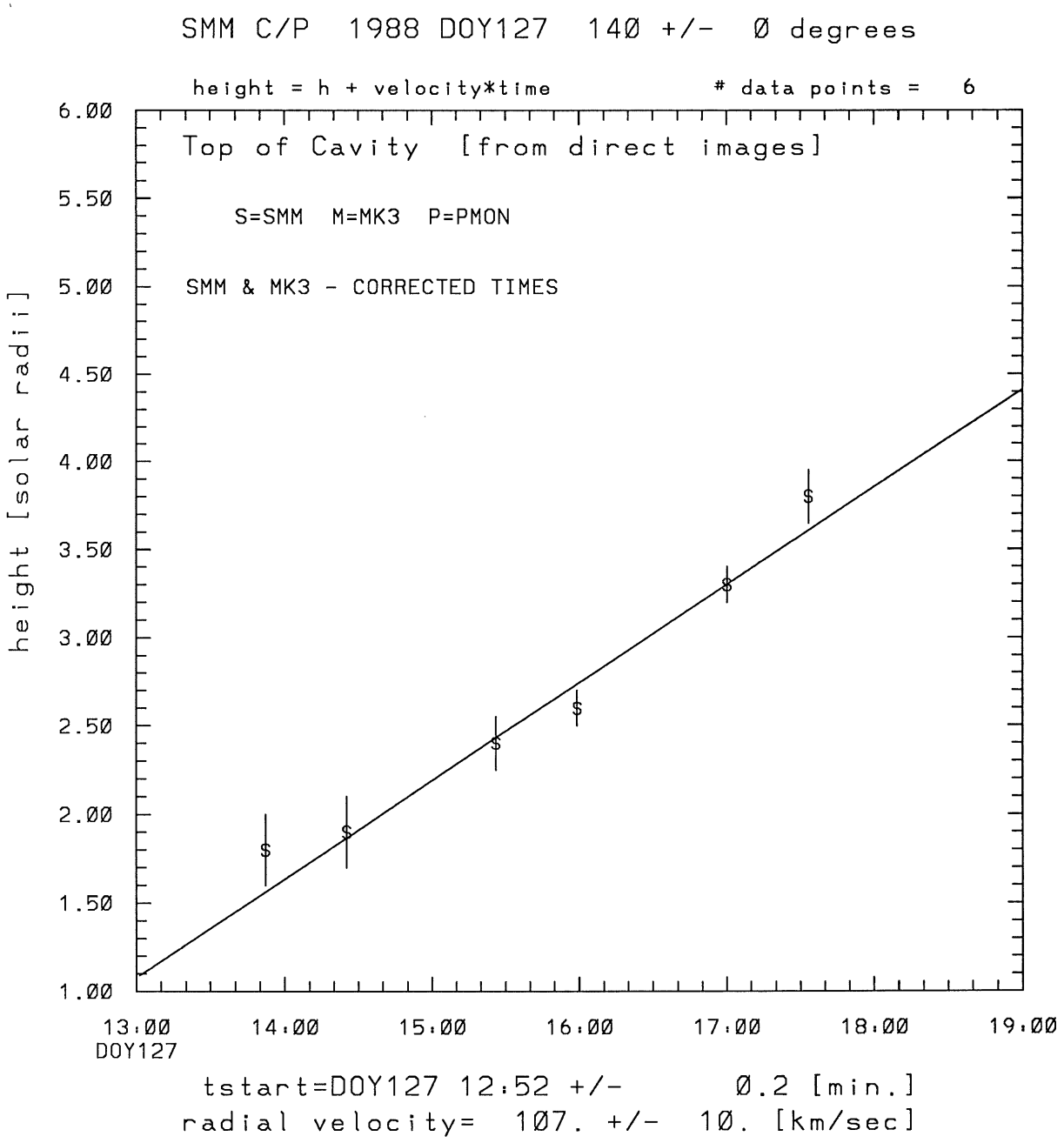
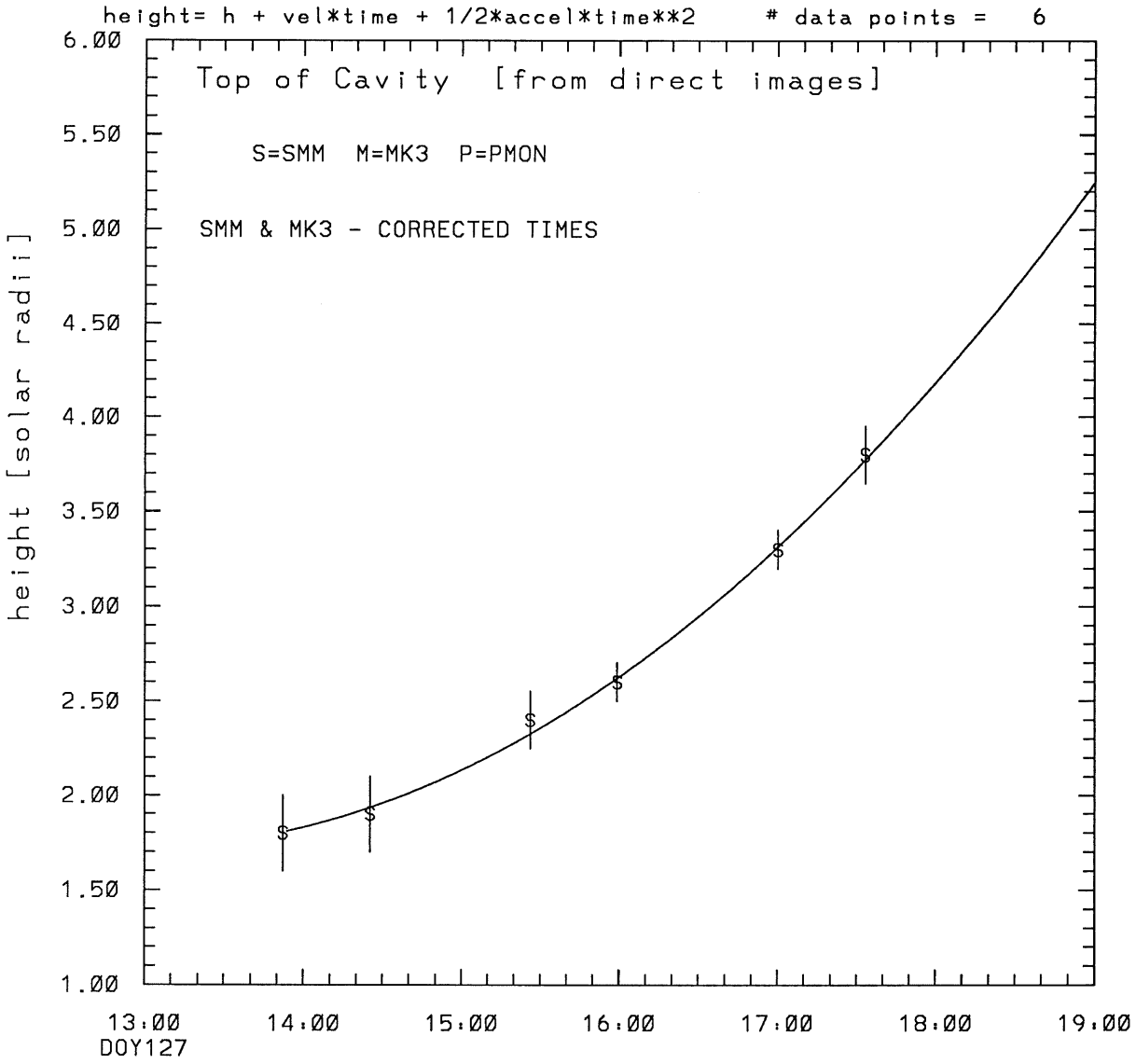
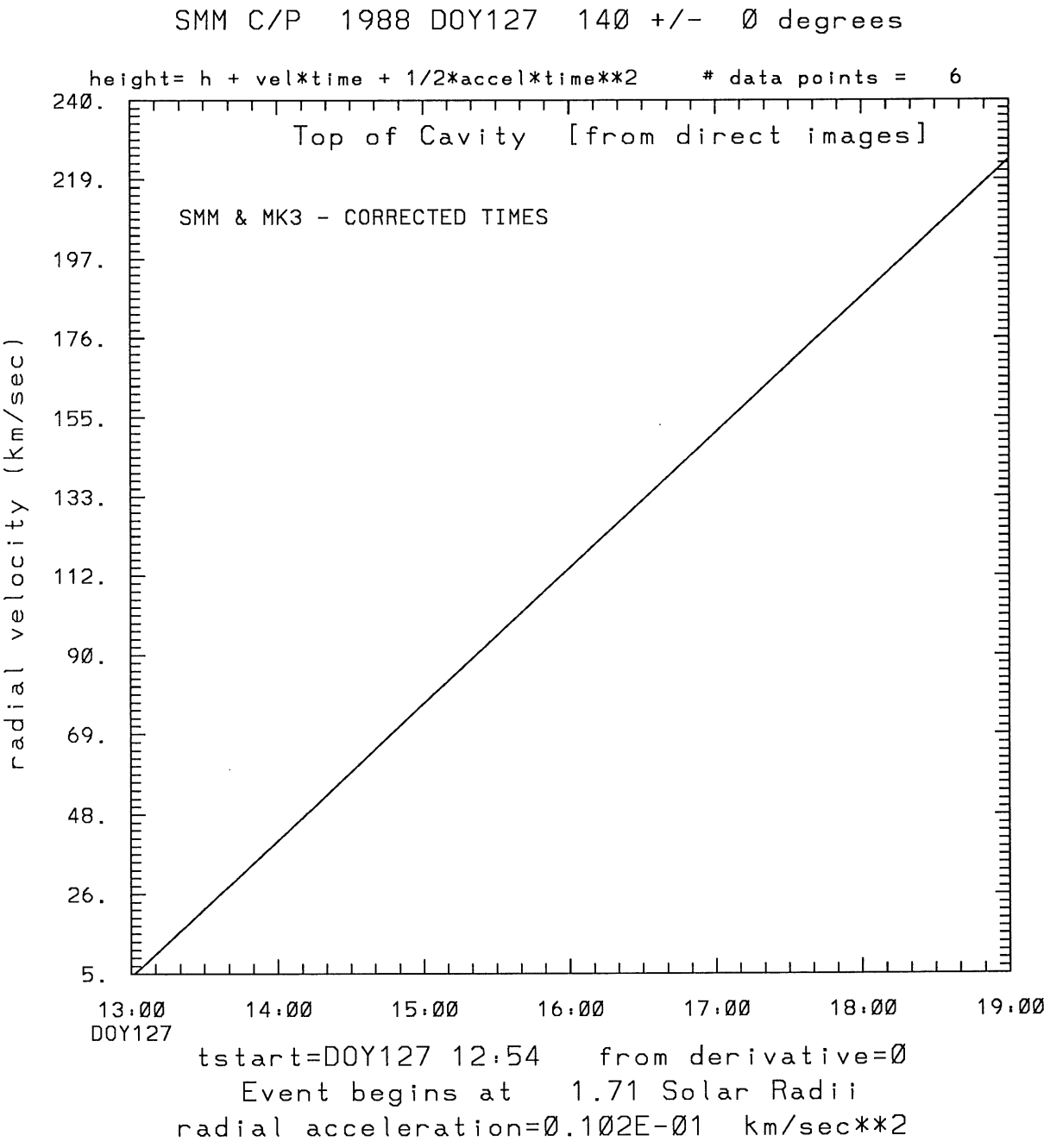

SMM C/P 1988 DOY127 140 +/- 0 degrees
height = h + velocity*time
# data points = 6
Top of Cavity [from direct images]
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
13:00
DOY127
14:00
15:00
16:00
17:00
18:00
19:00
tstart=DOY127 12:52 +/- 0.2 [min.]
radial velocity= 107. +/- 10. [km/sec]



tstart=DOY127 12:54 from derivative=0

Event begins at 1.71 Solar Radii

radial acceleration= 0.0102 +/- 0.0014 [km/sec**2]


SMM C/P 1988 DOY127 140 +/- Ø degrees
height= h + vel*time + 1/2*accel*time**2 # data points = 6
Top of Cavity [from direct images]
SMM & MK3 - CORRECTED TIMES
radial velocity (km/sec)
240.
219.
197.
176.
155.
133.
112.
90.
69.
48.
26.
5.
13:ØØ
DOY127
14:ØØ
15:ØØ
16:ØØ
17:ØØ
18:ØØ
19:ØØ
tstart=DOY127 12:54 from derivative=Ø
Event begins at 1.71 Solar Radii
radial acceleration=Ø.1Ø2E-Ø1 km/sec**2

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

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1988	127	13:52:10	1.80	+/- 0.20	140.0	+/- 0.5	SMM
1988	127	14:25:14	1.90	+/- 0.20	140.0	+/- 0.5	SMM
1988	127	15:26:14	2.40	+/- 0.15	140.0	+/- 0.5	SMM
1988	127	15:59:17	2.60	+/- 0.10	140.0	+/- 0.5	SMM
1988	127	17: 0:17	3.30	+/- 0.10	140.0	+/- 1.0	SMM
1988	127	17:33:20	3.80	+/- 0.15	140.0	+/- 1.0	SMM

****
Structure being measured:
Top of Cavity [from direct images]
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.844E+01 +/- 0.186E+00 [minutes]
In more convenient units:
Event began at DOY 127 12:52 +/- 0.186E+00 [minutes]

Origin defined at DOY127 13: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 107. +/- 10. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.108E+01 +/- 0.169E+00 [solar radii]
c(2) = 0.926E-02 +/- 0.846E-03 [radii/min]
c(2) = 0.107E+03 +/- 0.981E+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)= 0.15928E+00 [radii] see Bevington pg. 114
error in c(2)= 0.88136E-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) = 140. +/- 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 13:52 = 0. km/sec
The TOTAL velocity at 13:52 = 107. km/sec

The TANGENTIAL velocity at 14:25 = 0. km/sec
The TOTAL velocity at 14:25 = 107. km/sec

The TANGENTIAL velocity at 15:26 = 0. km/sec
The TOTAL velocity at 15:26 = 107. km/sec

The TANGENTIAL velocity at 15:59 = 0. km/sec
The TOTAL velocity at 15:59 = 107. km/sec

The TANGENTIAL velocity at 17: 0 = 0. km/sec
The TOTAL velocity at 17: 0 = 107. km/sec

The TANGENTIAL velocity at 17:33 = 0. km/sec
The TOTAL velocity at 17:33 = 107. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.79
Standard Deviation in start time measurement = 0.786E+02
Error in time = 0.36647E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.178E-01
Reduced Chi Squared = 0.898E-01
Chi Squared = 0.359E+00
The probability for exceeding chi square = 0.999E+00

The correlation coefficient = 0.984E+00
The probability that no LINEAR correlation exists between the variables = 0.3819E-03
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	127	13:52:10	1.80	+/- 0.20	140.0	+/- 0.5	SMM
1988	127	14:25:14	1.90	+/- 0.20	140.0	+/- 0.5	SMM
1988	127	15:26:14	2.40	+/- 0.15	140.0	+/- 0.5	SMM
1988	127	15:59:17	2.60	+/- 0.10	140.0	+/- 0.5	SMM
1988	127	17: 0:17	3.30	+/- 0.10	140.0	+/- 1.0	SMM
1988	127	17:33:20	3.80	+/- 0.15	140.0	+/- 1.0	SMM

****
Structure being measured:
Top of Cavity [from direct images]
****

****
OUTPUT:
****

START TIME:

tstart=DOY127 12:54 from derivative = 0
Event begins at 1.71 Solar Radii
Origin defined at DOY127 13: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.102E-01 +/- 0.143E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.171E+01 +/- 0.103E+00 [solar radii]
c(2) = 0.343E-03 +/- 0.128E-02 [radii/min]
c(2) = 0.398E+01 +/- 0.148E+02 [km/sec]
c(3) = 0.263E-04 +/- 0.370E-05 [radii/min**2]
c(3) = 0.102E-01 +/- 0.143E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.10005E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.14745E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.14281E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.33773E-03 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.43095E-05 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.11518E-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) = 140. +/- 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 13:52 = 0. km/sec
The TOTAL velocity at 13:52 = 36. km/sec

The TANGENTIAL velocity at 14:25 = 0. km/sec
The TOTAL velocity at 14:25 = 56. km/sec

The TANGENTIAL velocity at 15:26 = 0. km/sec
The TOTAL velocity at 15:26 = 93. km/sec

The TANGENTIAL velocity at 15:59 = 0. km/sec
The TOTAL velocity at 15:59 = 113. km/sec

The TANGENTIAL velocity at 17: 0 = 0. km/sec
The TOTAL velocity at 17: 0 = 151. km/sec

The TANGENTIAL velocity at 17:33 = 0. km/sec
The TOTAL velocity at 17:33 = 171. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.79
Standard Deviation in start time measurement = 0.786E+02
Value of reduced Chi Squared returned from nllst2 = 0.163E-02
Reduced Chi Squared = 0.860E-02
Chi Squared = 0.258E-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 = 0.8670E+00
The correlation between the data and the time**2 term = 0.8980E+00
0The correlation between the data and the complete equation of motion = 0.9996E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]