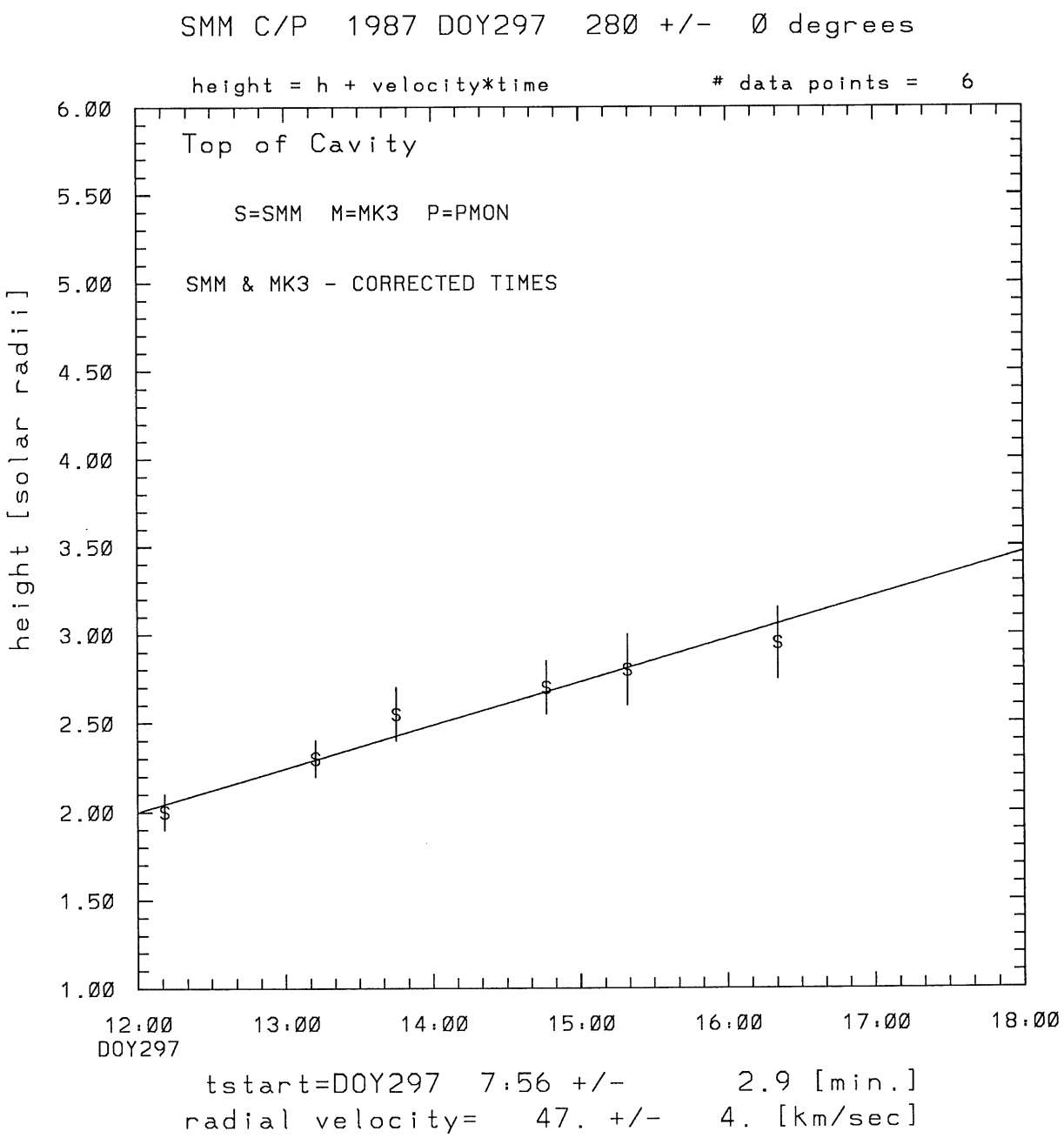
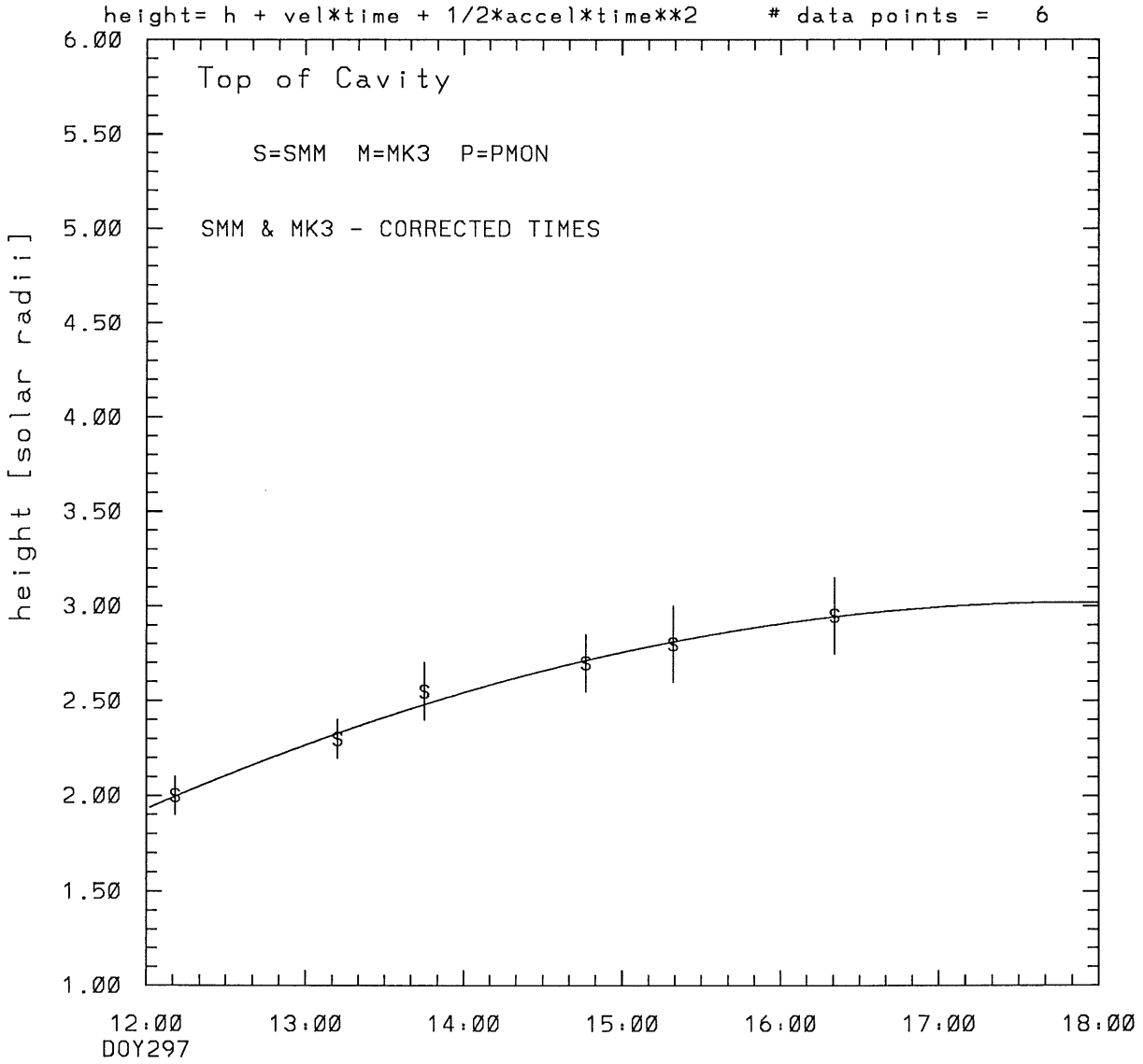
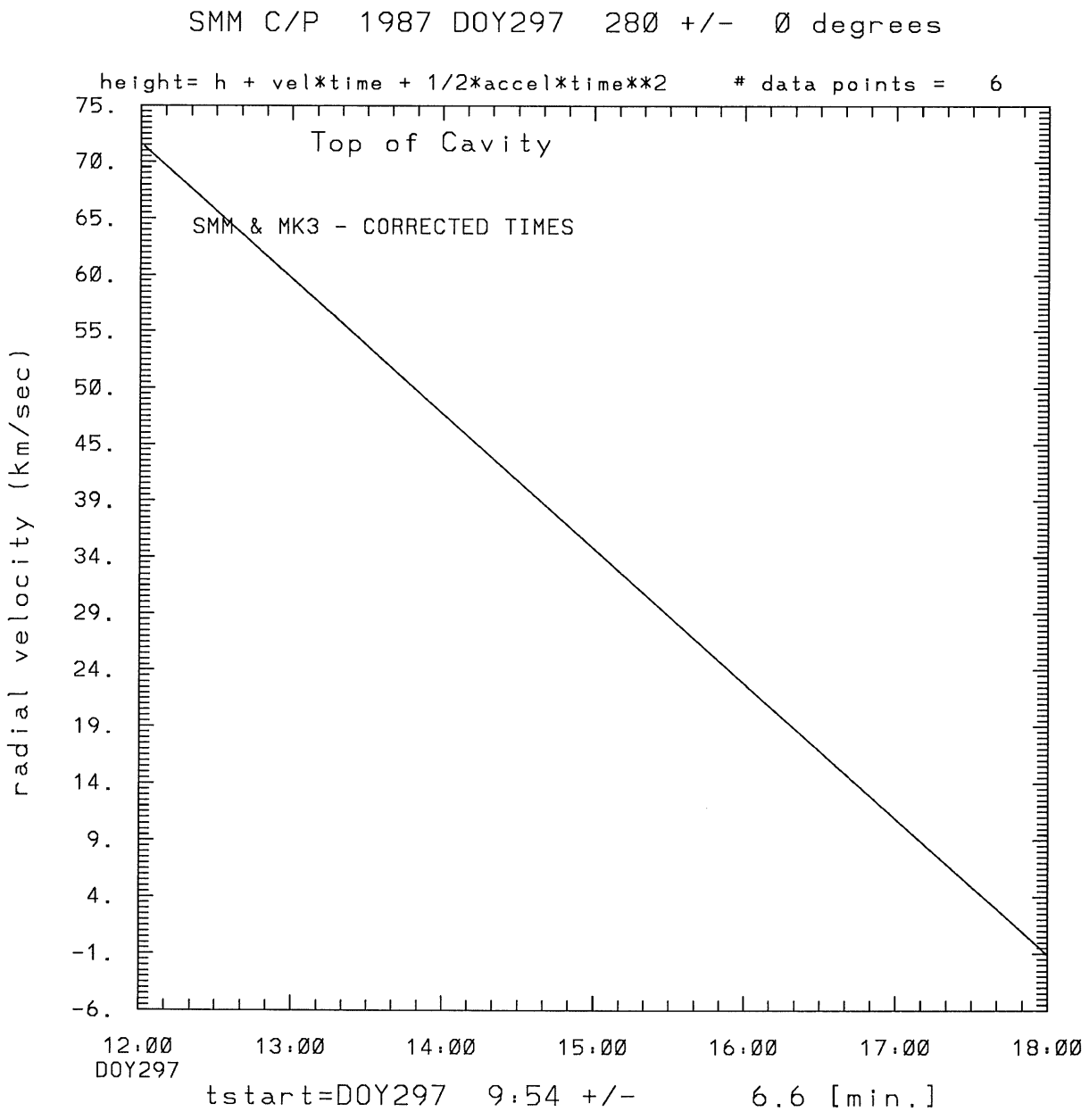

SMM C/P 1987 DOY297 280 +/- 0 degrees
height = h + velocity*time
# data points = 6
Top of Cavity
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
12:00
DOY297
13:00
14:00
15:00
16:00
17:00
18:00
tstart=DOY297 7:56 +/- 2.9 [min.]
radial velocity= 47. +/- 4. [km/sec]

SMM C/P 1987 DOY297 280 +/- 0 degrees



tstart=DOY297 9:54 +/- 6.6 [min.]

radial acceleration=-0.0034 +/- 0.0010 [km/sec**2]


SMM C/P 1987 DOY297 280 +/- 0 degrees
height= h + vel*time + 1/2*accel*time**2 # data points = 6
Top of Cavity
SMM & MK3 - CORRECTED TIMES
radial velocity (km/sec)
75.
70.
65.
60.
55.
50.
45.
39.
34.
29.
24.
19.
14.
9.
4.
-1.
-6.
12:00
DOY297
13:00
14:00
15:00
16:00
17:00
18:00
tstart=DOY297 9:54 +/- 6.6 [min.]
radial acceleration=-.337E-02 km/sec**2

This is a 1 order run
****

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1987	297	12:10:53	2.00	+/- 0.10	280.0	+/- 0.5	SMM
1987	297	13:12: 7	2.30	+/- 0.10	280.0	+/- 0.5	SMM
1987	297	13:45: 7	2.55	+/- 0.15	280.0	+/- 0.5	SMM
1987	297	14:46:21	2.70	+/- 0.15	280.0	+/- 0.5	SMM
1987	297	15:19:21	2.80	+/- 0.20	280.0	+/- 0.5	SMM
1987	297	16:20:36	2.95	+/- 0.20	280.0	+/- 0.5	SMM

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

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.246E+03 +/- 0.294E+01 [minutes]
In more convenient units:
Event began at DOY 297 7:56 +/- 0.294E+01 [minutes]

Origin defined at DOY297 12: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 47. +/- 4. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.200E+01 +/- 0.423E-01 [solar radii]
c(2) = 0.407E-02 +/- 0.350E-03 [radii/min]
c(2) = 0.472E+02 +/- 0.406E+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)= 0.67622E-01 [radii] see Bevington pg. 114
error in c(2)= 0.42529E-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) = 280. +/- 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 12:10 = 0.000E+00 km/sec
The TOTAL velocity at 12:10 = 47. km/sec

The TANGENTIAL velocity at 13:12 = 0.000E+00 km/sec
The TOTAL velocity at 13:12 = 47. km/sec

The TANGENTIAL velocity at 13:45 = 0.000E+00 km/sec
The TOTAL velocity at 13:45 = 47. km/sec

The TANGENTIAL velocity at 14:46 = 0.000E+00 km/sec
The TOTAL velocity at 14:46 = 47. km/sec

The TANGENTIAL velocity at 15:19 = 0.000E+00 km/sec
The TOTAL velocity at 15:19 = 47. km/sec

The TANGENTIAL velocity at 16:20 = 0.000E+00 km/sec
The TOTAL velocity at 16:20 = 47. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.35
Standard Deviation in start time measurement = 0.828E+02
Error in time = 0.42406E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.424E-02
Reduced Chi Squared = 0.305E-01
Chi Squared = 0.122E+00
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.978E+00
The probability that no LINEAR correlation exists between the variables = 0.6921E-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
1987 297	12:10:53	2.00	+/- 0.10	280.0	+/- 0.5	SMM
1987 297	13:12: 7	2.30	+/- 0.10	280.0	+/- 0.5	SMM
1987 297	13:45: 7	2.55	+/- 0.15	280.0	+/- 0.5	SMM
1987 297	14:46:21	2.70	+/- 0.15	280.0	+/- 0.5	SMM
1987 297	15:19:21	2.80	+/- 0.20	280.0	+/- 0.5	SMM
1987 297	16:20:36	2.95	+/- 0.20	280.0	+/- 0.5	SMM

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

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.128E+03 +/- 0.664E+01 [minutes]
In more convenient units:
Event began at DOY 297 9:54 +/- 0.664E+01 [minutes]

Origin defined at DOY297 12: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = -0.337E-02 +/- 0.992E-03 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.193E+01 +/- 0.317E-01 [solar radii]
c(2) = 0.617E-02 +/- 0.650E-03 [radii/min]
c(2) = 0.716E+02 +/- 0.754E+01 [km/sec]
c(3) = -0.872E-05 +/- 0.257E-05 [radii/min**2]
c(3) = -0.337E-02 +/- 0.992E-03 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.48381E-01 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.35585E-02 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.81479E-03 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.11396E-03 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.28898E-05 [radii/min**] Bevington pg 154 (8-30)

Exact error in c(3) = 0.42428E-06 [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) = 280. +/- 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 12:10 = 0.000E+00 km/sec
The TOTAL velocity at 12:10 = 69. km/sec

The TANGENTIAL velocity at 13:12 = 0.000E+00 km/sec
The TOTAL velocity at 13:12 = 57. km/sec

The TANGENTIAL velocity at 13:45 = 0.000E+00 km/sec
The TOTAL velocity at 13:45 = 50. km/sec

The TANGENTIAL velocity at 14:46 = 0.000E+00 km/sec
The TOTAL velocity at 14:46 = 38. km/sec

The TANGENTIAL velocity at 15:19 = 0.000E+00 km/sec
The TOTAL velocity at 15:19 = 31. km/sec

The TANGENTIAL velocity at 16:20 = 0.000E+00 km/sec
The TOTAL velocity at 16:20 = 19. km/sec

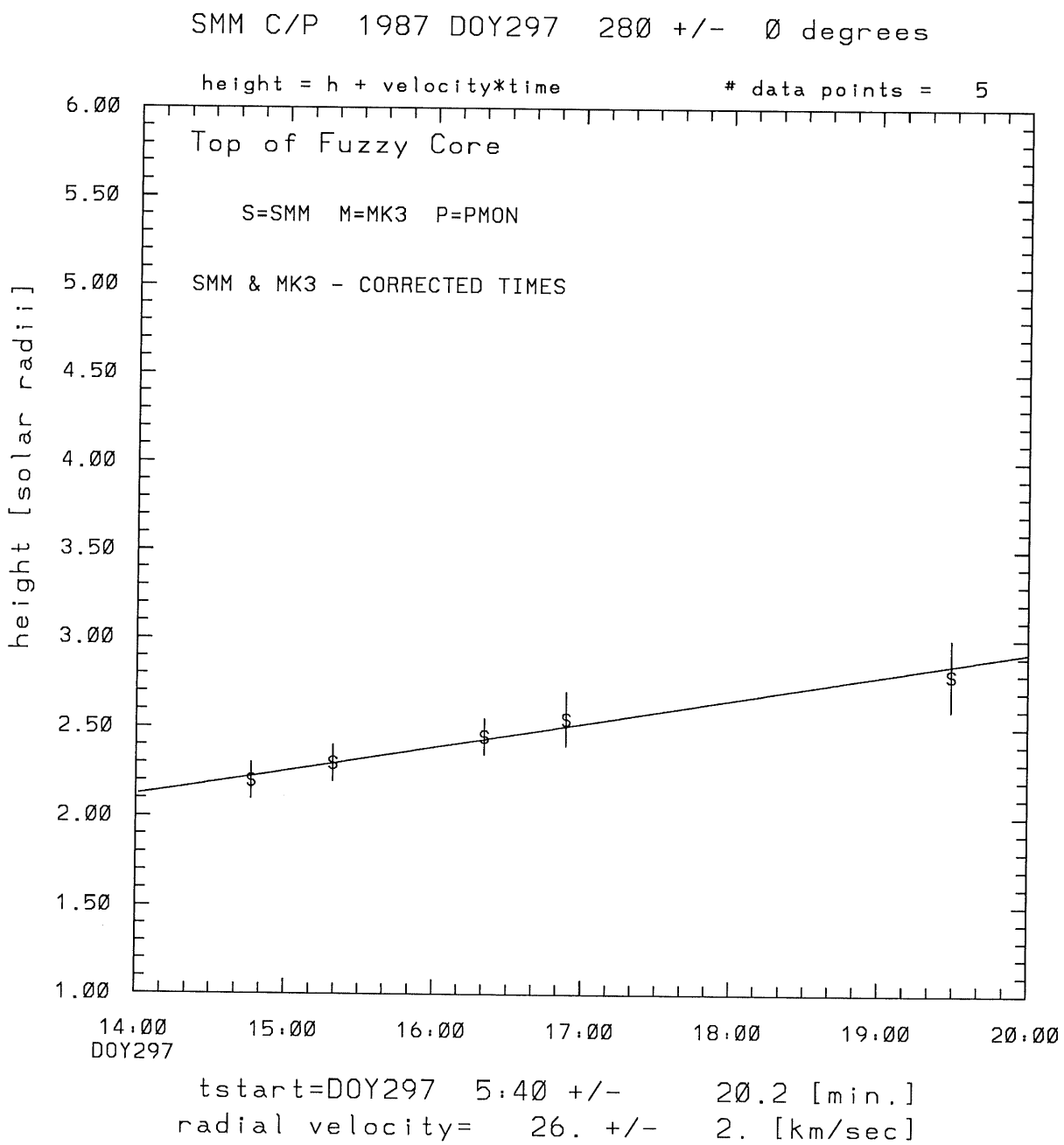
****
The following info is for estimating goodness of the fit
****

Fit is ok [ier=1]

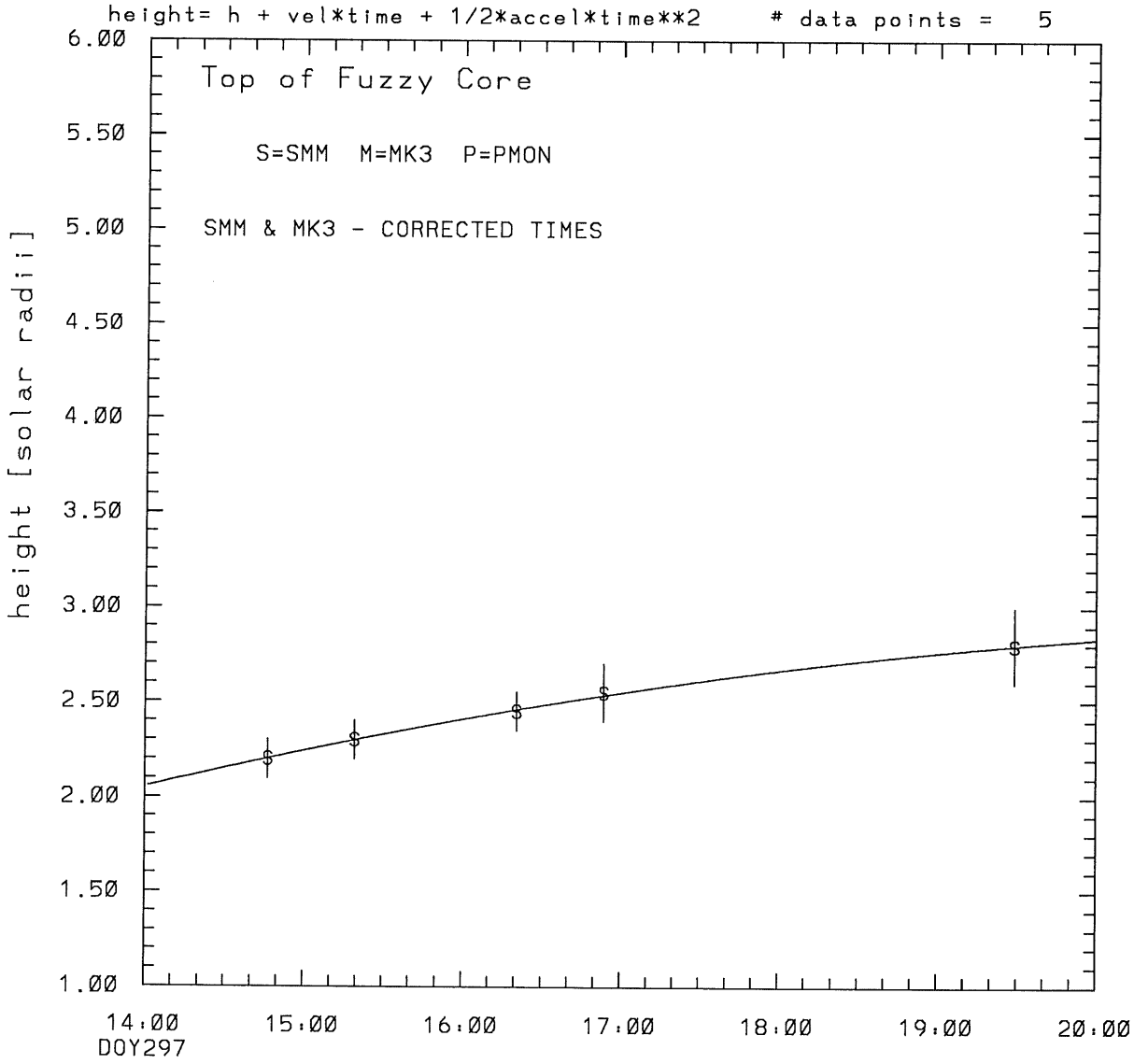
Standard Deviation in the height = 0.35
Standard Deviation in start time measurement = 0.828E+02
Value of reduced Chi Squared returned from nllst2 = 0.136E-02
Reduced Chi Squared = 0.588E-02
Chi Squared = 0.176E-01
The probability for exceeding chi square = 0.100E+01

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 = 0.1030E+01
The correlation between the data and the time**2 term = 0.8575E+00
The correlation between the data and the complete equation of motion = 0.9871E+00

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

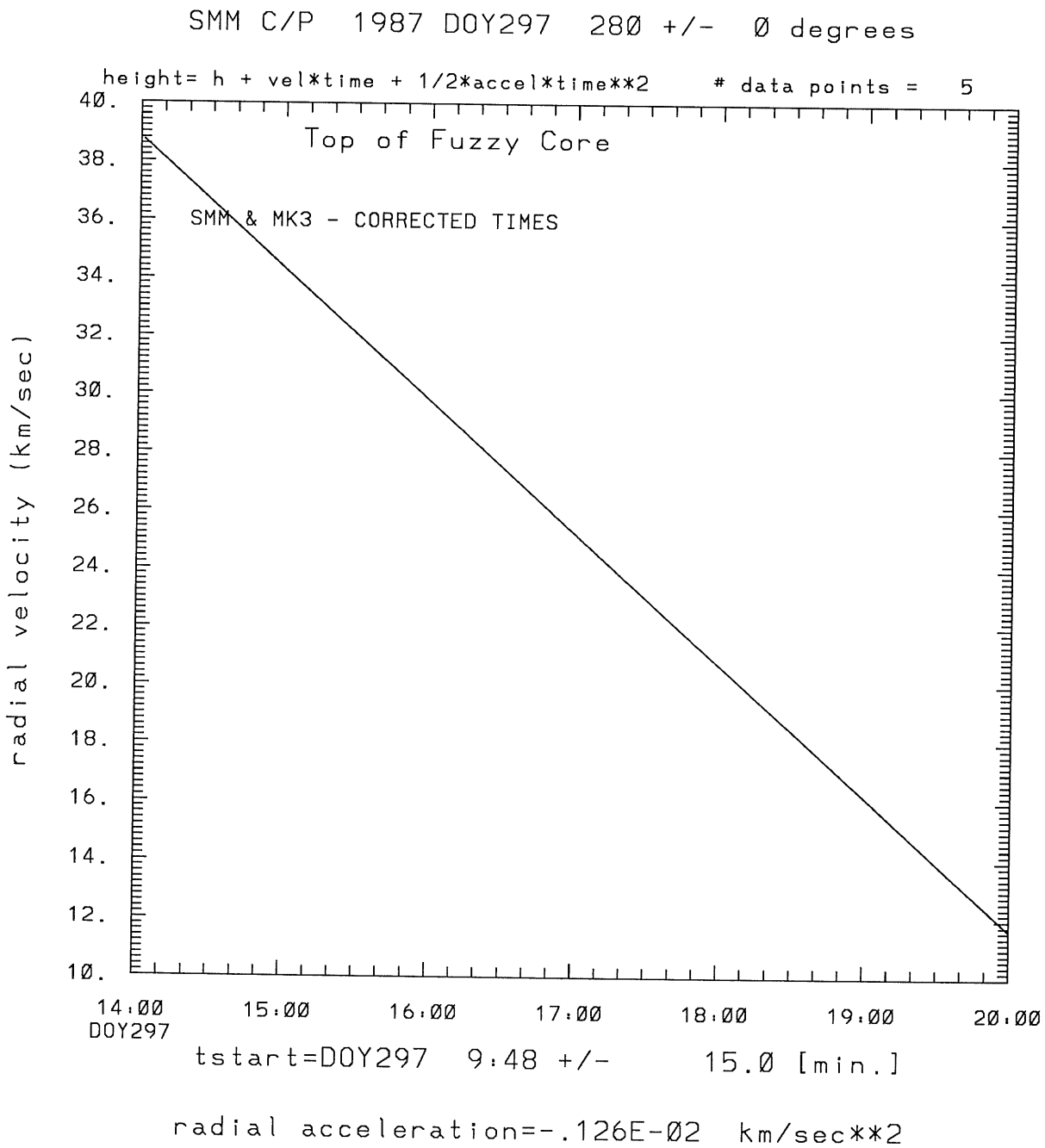

SMM C/P 1987 DOY297 280 +/- 0 degrees
height = h + velocity*time
# data points = 5
Top of Fuzzy Core
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
14:00
DOY297
15:00
16:00
17:00
18:00
19:00
20:00
tstart=DOY297 5:40 +/- 20.2 [min.]
radial velocity= 26. +/- 2. [km/sec]

SMM C/P 1987 DOY297 280 +/- 0 degrees



tstart=DOY297 9:48 +/- 15.0 [min.]

radial acceleration=-0.0013 +/- 0.0002 [km/sec**2]


SMM C/P 1987 DOY297 280 +/- 0 degrees
height= h + vel*time + 1/2*accel*time**2 # data points = 5
Top of Fuzzy Core
SMM & MK3 - CORRECTED TIMES
radial velocity (km/sec)
40.
38.
36.
34.
32.
30.
28.
26.
24.
22.
20.
18.
16.
14.
12.
10.
14:00
DOY297
15:00
16:00
17:00
18:00
19:00
20:00
tstart=DOY297 9:48 +/- 15.0 [min.]
radial acceleration=-.126E-02 km/sec**2

This is a 1 order run
****

****
INPUT:
****

year doy	time	radii	error in radius	angle	error in angle	datatype
1987 297	14:46:21	2.20	+/- 0.10	280.0	+/- 0.5	SMM
1987 297	15:19:21	2.30	+/- 0.10	280.0	+/- 0.5	SMM
1987 297	16:20:36	2.45	+/- 0.10	280.0	+/- 0.5	SMM
1987 297	16:53:36	2.55	+/- 0.15	280.0	+/- 0.5	SMM
1987 297	19:29: 5	2.80	+/- 0.20	280.0	+/- 0.5	SMM

****
Structure being measured:
Top of Fuzzy Core
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.500E+03 +/- 0.202E+02 [minutes]
In more convenient units:
Event began at DOY 297 5:40 +/- 0.202E+02 [minutes]

Origin defined at DOY297 14: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 26. +/- 2. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.212E+01 +/- 0.237E-01 [solar radii]
c(2) = 0.224E-02 +/- 0.174E-03 [radii/min]
c(2) = 0.260E+02 +/- 0.201E+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)= 0.36157E-01 [radii] see Bevington pg. 114
error in c(2)= 0.19805E-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) = 280. +/- 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 14:46 = 0.000E+00 km/sec
The TOTAL velocity at 14:46 = 26. km/sec

The TANGENTIAL velocity at 15:19 = 0.000E+00 km/sec
The TOTAL velocity at 15:19 = 26. km/sec

The TANGENTIAL velocity at 16:20 = 0.000E+00 km/sec
The TOTAL velocity at 16:20 = 26. km/sec

The TANGENTIAL velocity at 16:53 = 0.000E+00 km/sec
The TOTAL velocity at 16:53 = 26. km/sec

The TANGENTIAL velocity at 19:29 = 0.000E+00 km/sec
The TOTAL velocity at 19:29 = 26. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.23
Standard Deviation in start time measurement = 0.984E+02
Error in time = 0.33719E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.801E-03
Reduced Chi Squared = 0.800E-02
Chi Squared = 0.240E-01
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.989E+00
The probability that no LINEAR correlation exists between the variables = 0.1335E-02
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
1987	297	14:46:21	2.20	+/- 0.10	280.0	+/- 0.5	SMM
1987	297	15:19:21	2.30	+/- 0.10	280.0	+/- 0.5	SMM
1987	297	16:20:36	2.45	+/- 0.10	280.0	+/- 0.5	SMM
1987	297	16:53:36	2.55	+/- 0.15	280.0	+/- 0.5	SMM
1987	297	19:29: 5	2.80	+/- 0.20	280.0	+/- 0.5	SMM

****
Structure being measured:
Top of Fuzzy Core
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.252E+03 +/- 0.150E+02 [minutes]
In more convenient units:
Event began at DOY 297 9:48 +/- 0.150E+02 [minutes]

Origin defined at DOY297 14: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = -0.126E-02 +/- 0.207E-03 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.205E+01 +/- 0.134E-01 [solar radii]
c(2) = 0.335E-02 +/- 0.190E-03 [radii/min]
c(2) = 0.388E+02 +/- 0.221E+01 [km/sec]
c(3) = -0.325E-05 +/- 0.534E-06 [radii/min**2]
c(3) = -0.126E-02 +/- 0.207E-03 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.19696E-01 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.27962E-02 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.25725E-03 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.68108E-04 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.65262E-06 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.18205E-06 [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) = 280. +/- 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 14:46 = 0.000E+00 km/sec
The TOTAL velocity at 14:46 = 35. km/sec

The TANGENTIAL velocity at 15:19 = 0.000E+00 km/sec
The TOTAL velocity at 15:19 = 33. km/sec

The TANGENTIAL velocity at 16:20 = 0.000E+00 km/sec
The TOTAL velocity at 16:20 = 28. km/sec

The TANGENTIAL velocity at 16:53 = 0.000E+00 km/sec
The TOTAL velocity at 16:53 = 26. km/sec

The TANGENTIAL velocity at 19:29 = 0.000E+00 km/sec
The TOTAL velocity at 19:29 = 14. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.23
Standard Deviation in start time measurement = 0.984E+02
Value of reduced Chi Squared returned from nllst2 = 0.799E-04
Reduced Chi Squared = 0.556E-03
Chi Squared = 0.111E-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 = 0.8302E+00
The correlation between the data and the time**2 term = 0.7117E+00
The correlation between the data and the complete equation of motion = 0.9952E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]