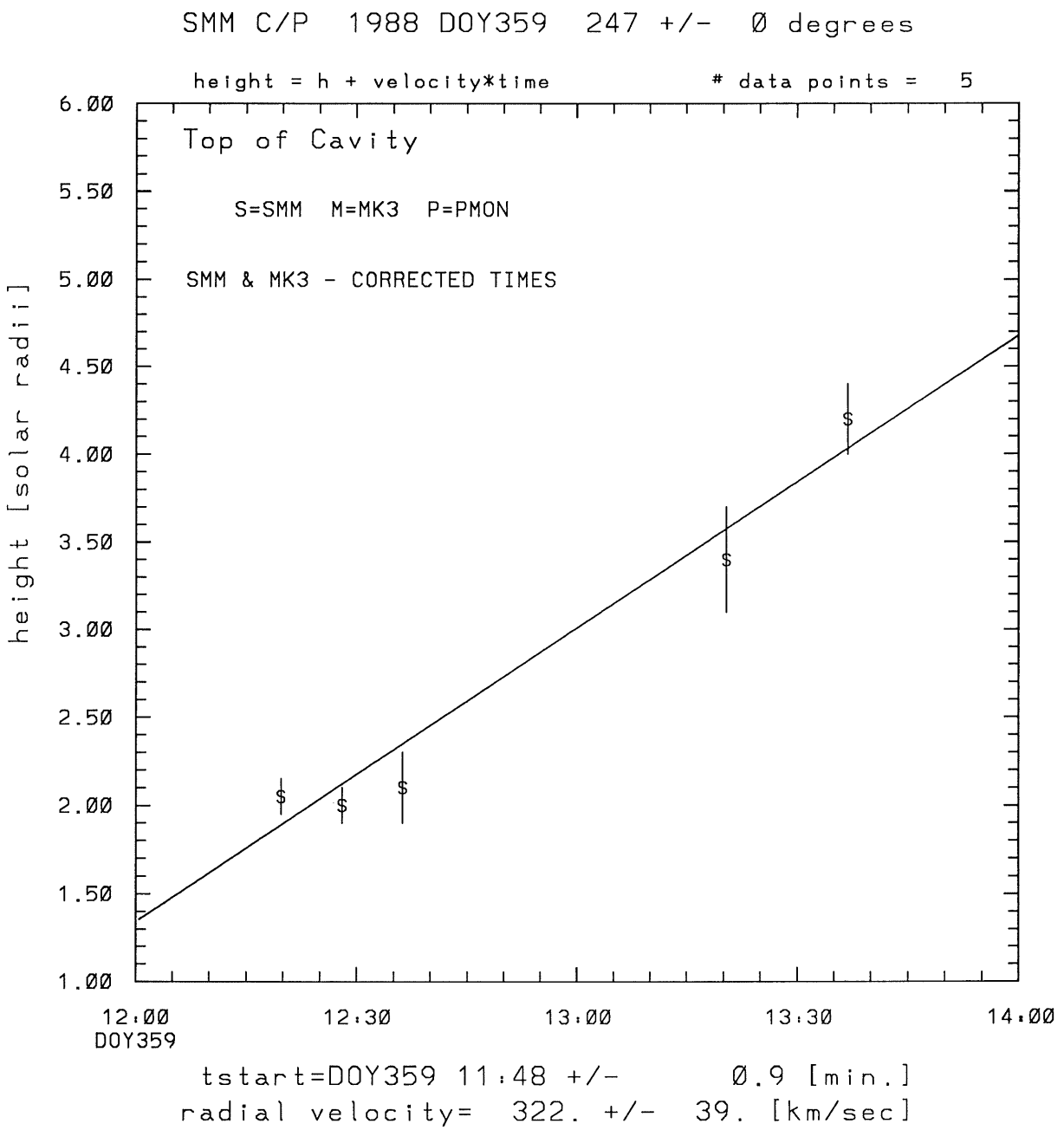
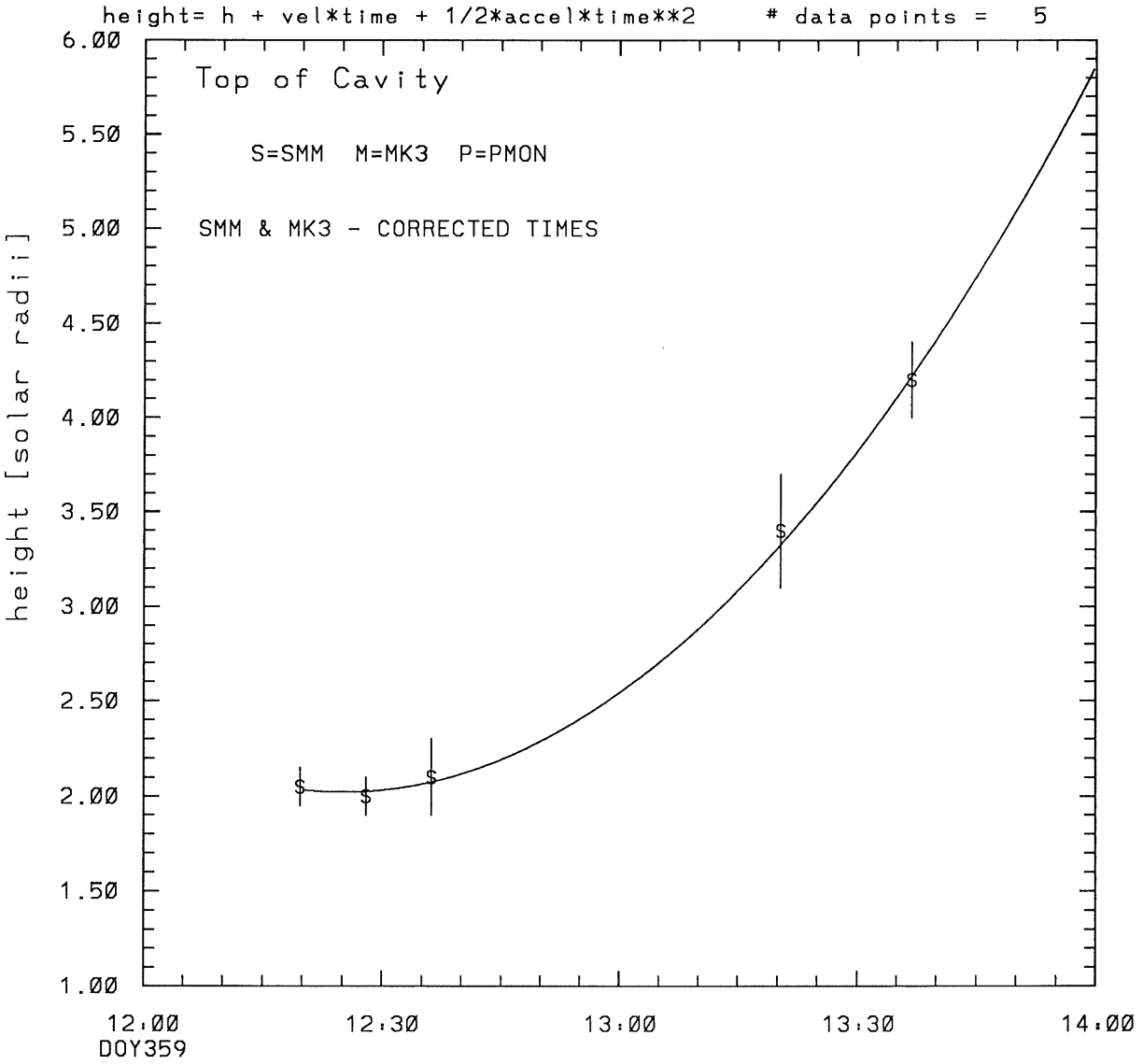
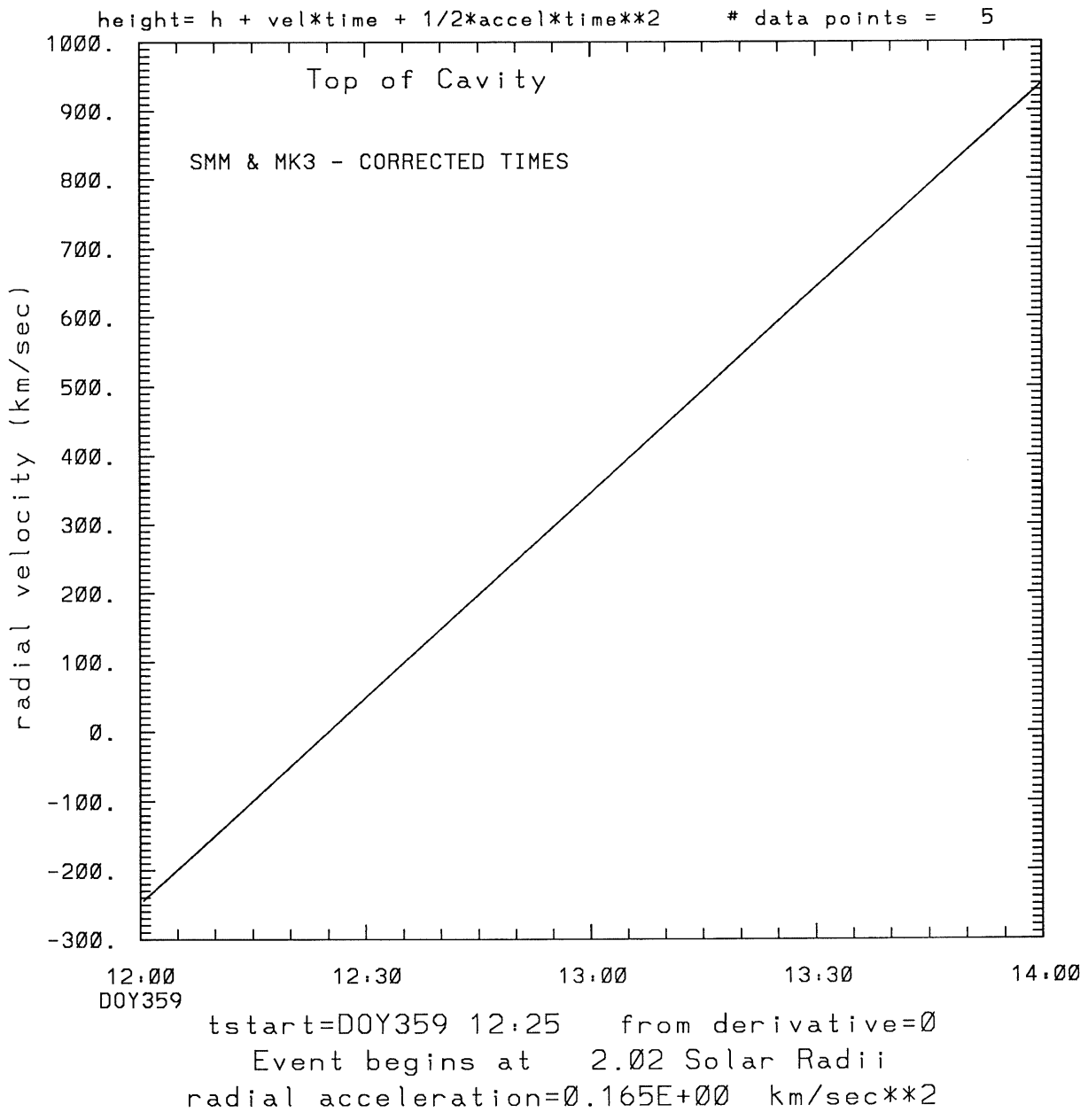

SMM C/P 1988 DOY359 247 +/- Ø degrees
height = h + velocity*time
# data points = 5
Top of Cavity
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.ØØ
5.5Ø
5.ØØ
4.5Ø
4.ØØ
3.5Ø
3.ØØ
2.5Ø
2.ØØ
1.5Ø
1.ØØ
12:ØØ
DOY359
12:3Ø
13:ØØ
13:3Ø
14:ØØ
tstart=DOY359 11:48 +/- Ø.9 [min.]
radial velocity= 322. +/- 39. [km/sec]

SMM C/P 1988 DOY359 247 +/- Ø degrees



tstart=DOY359 12:25 from derivative=Ø
Event begins at 2.Ø2 Solar Radii
radial acceleration= Ø.1649 +/- Ø.Ø158 [km/sec**2]


SMM C/P 1988 DOY359 247 +/- Ø degrees
height= h + vel*time + 1/2*accel*time**2
# data points = 5
Top of Cavity
SMM & MK3 - CORRECTED TIMES
radial velocity (km/sec)
1000.
900.
800.
700.
600.
500.
400.
300.
200.
100.
Ø.
-100.
-200.
-300.
12:ØØ
DOY359
12:3Ø
13:ØØ
13:3Ø
14:ØØ
tstart=DOY359 12:25 from derivative=Ø
Event begins at 2.Ø2 Solar Radii
radial acceleration=Ø.165E+ØØ km/sec**2

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

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1988	359	12:19:44	2.05	+/- 0.10	247.0	+/- 0.5	SMM
1988	359	12:28: 1	2.00	+/- 0.10	247.0	+/- 0.5	SMM
1988	359	12:36:15	2.10	+/- 0.20	247.0	+/- 0.5	SMM
1988	359	13:20:23	3.40	+/- 0.30	247.0	+/- 1.0	SMM
1988	359	13:36:53	4.20	+/- 0.20	247.0	+/- 1.0	SMM

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

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.123E+02 +/- 0.932E+00 [minutes]
In more convenient units:
Event began at DOY 359 11:48 +/- 0.932E+00 [minutes]

Origin defined at DOY359 12: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 322. +/- 39. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.134E+01 +/- 0.140E+00 [solar radii]
c(2) = 0.278E-01 +/- 0.335E-02 [radii/min]
c(2) = 0.322E+03 +/- 0.389E+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)= 0.20454E+00 [radii] see Bevington pg. 114
error in c(2)= 0.33776E-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) = 247. +/- 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 12:19 = 0. km/sec
The TOTAL velocity at 12:19 = 322. km/sec

The TANGENTIAL velocity at 12:28 = 0. km/sec
The TOTAL velocity at 12:28 = 322. km/sec

The TANGENTIAL velocity at 12:36 = 0. km/sec
The TOTAL velocity at 12:36 = 322. km/sec

The TANGENTIAL velocity at 13:20 = 0. km/sec
The TOTAL velocity at 13:20 = 322. km/sec

The TANGENTIAL velocity at 13:36 = 0. km/sec
The TOTAL velocity at 13:36 = 322. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 1.00
Standard Deviation in start time measurement = 0.306E+02
Error in time = 0.14407E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.315E-01
Reduced Chi Squared = 0.167E+00
Chi Squared = 0.501E+00
The probability for exceeding chi square = 0.992E+00

The correlation coefficient = 0.981E+00
The probability that no LINEAR correlation exists between the variables = 0.3027E-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
1988	359	12:19:44	2.05	+/- 0.10	247.0	+/- 0.5	SMM
1988	359	12:28: 1	2.00	+/- 0.10	247.0	+/- 0.5	SMM
1988	359	12:36:15	2.10	+/- 0.20	247.0	+/- 0.5	SMM
1988	359	13:20:23	3.40	+/- 0.30	247.0	+/- 1.0	SMM
1988	359	13:36:53	4.20	+/- 0.20	247.0	+/- 1.0	SMM

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

****
OUTPUT:
****

START TIME:

tstart=DOY359 12:25 from derivative = 0
Event begins at 2.02 Solar Radii
Origin defined at DOY359 12: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.165E+00 +/- 0.158E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.229E+01 +/- 0.949E-01 [solar radii]
c(2) = -0.214E-01 +/- 0.477E-02 [radii/min]
c(2) = -0.248E+03 +/- 0.553E+02 [km/sec]
c(3) = 0.426E-03 +/- 0.410E-04 [radii/min**2]
c(3) = 0.165E+00 +/- 0.158E-01 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.15811E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.43365E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.71658E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.21755E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.60782E-04 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.18224E-04 [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) = 247. +/- 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 12:19 = 0. km/sec
The TOTAL velocity at 12:19 = -53. km/sec

The TANGENTIAL velocity at 12:28 = 0. km/sec
The TOTAL velocity at 12:28 = 29. km/sec

The TANGENTIAL velocity at 12:36 = 0. km/sec
The TOTAL velocity at 12:36 = 110. km/sec

The TANGENTIAL velocity at 13:20 = 0. km/sec
The TOTAL velocity at 13:20 = 547. km/sec

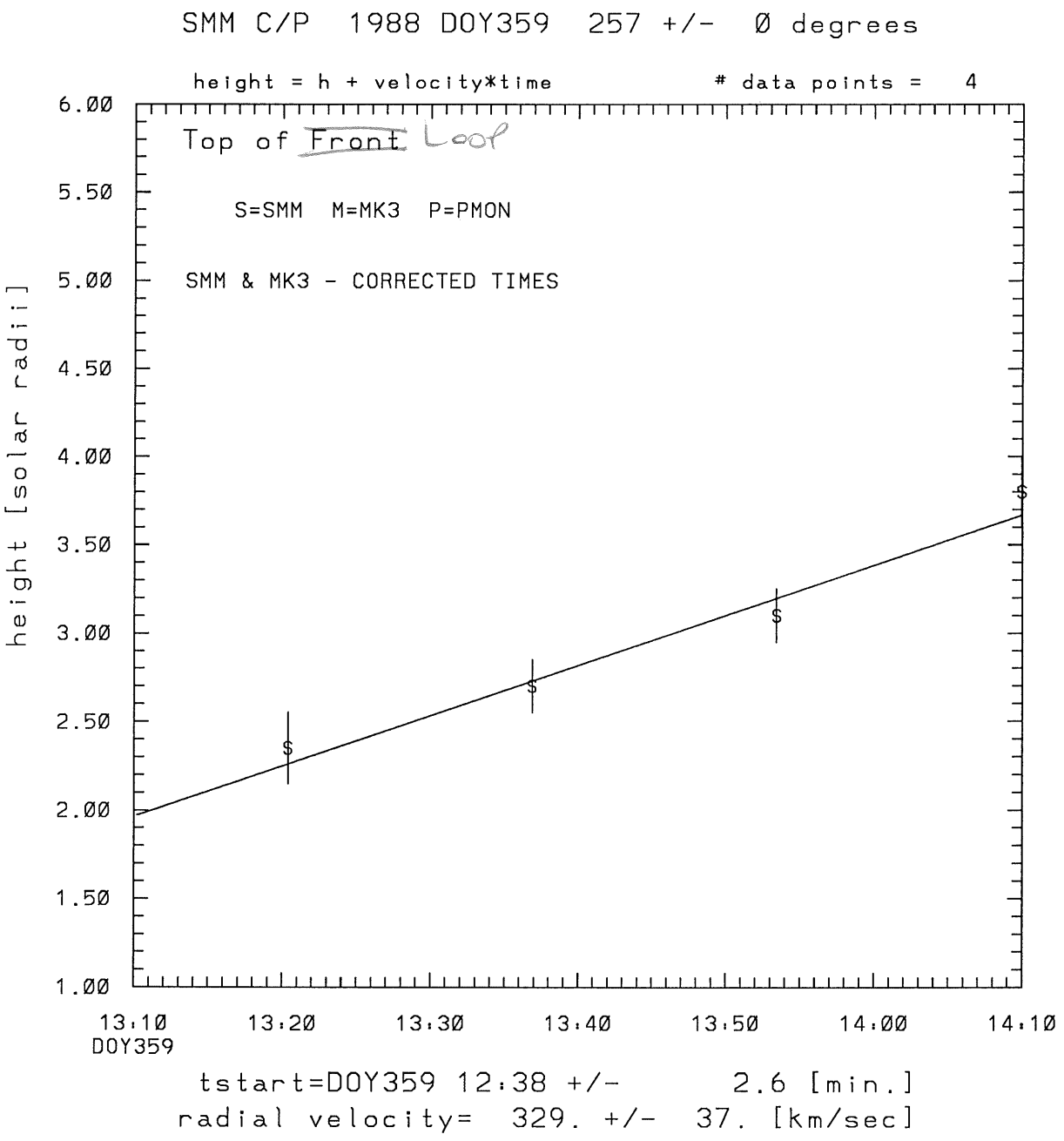
The TANGENTIAL velocity at 13:36 = 0. km/sec
The TOTAL velocity at 13:36 = 710. km/sec

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

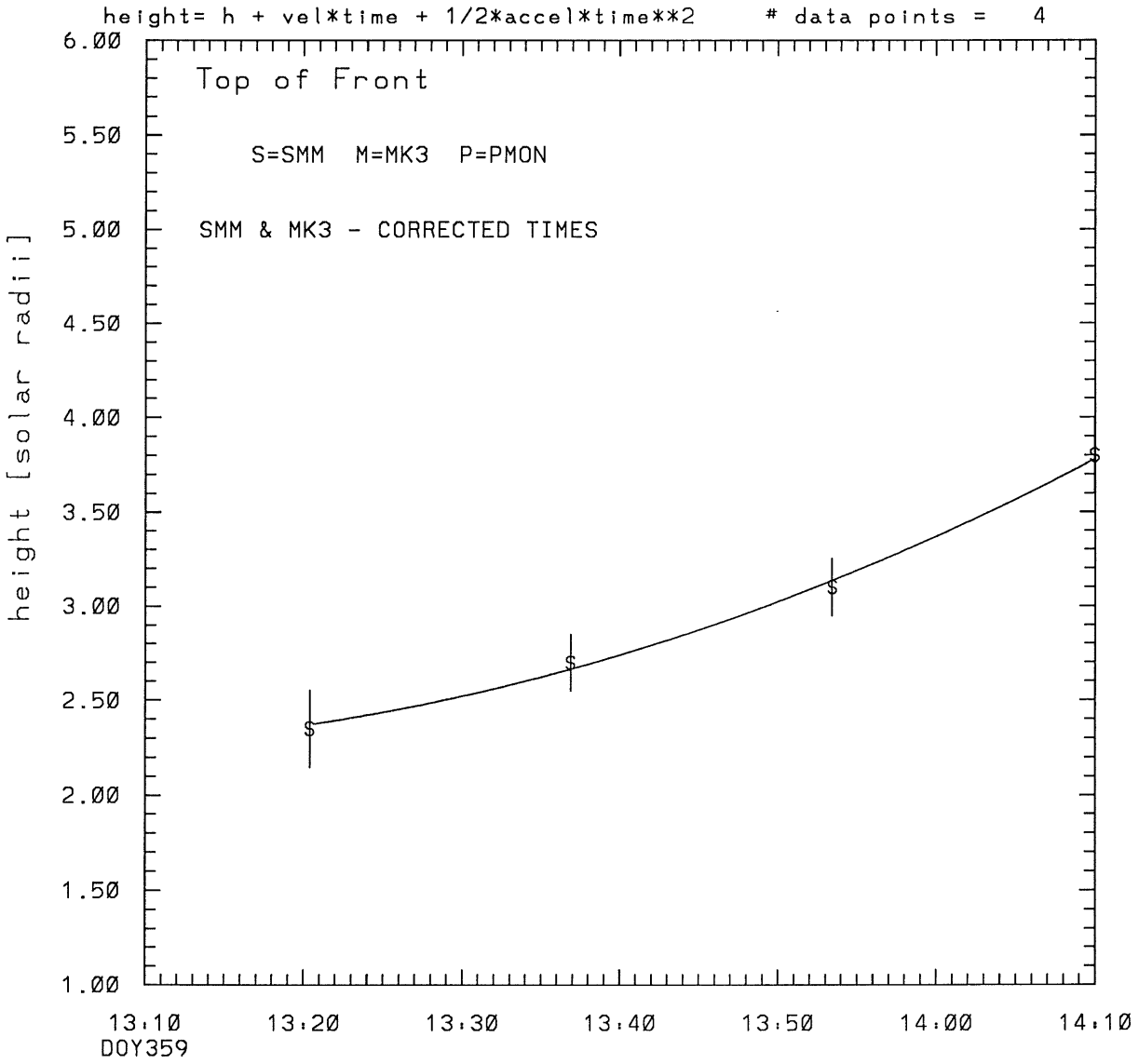
Fit is ok [ier=1]

Standard Deviation in the height = 1.00
Standard Deviation in start time measurement = 0.306E+02
Value of reduced Chi Squared returned from nllst2 = 0.113E-02
Reduced Chi Squared = 0.137E-01
Chi Squared = 0.274E-01
The probability for exceeding chi square = 0.999E+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 = 0.9491E+00
The correlation between the data and the time**2 term = 0.9273E+00
0The correlation between the data and the complete equation of motion = 0.9895E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]


SMM C/P 1988 DOY359 257 +/- Ø degrees
height = h + velocity*time
# data points = 4
Top of Front Loop
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
13:10
DOY359
13:20
13:30
13:40
13:50
14:00
14:10
tstart=DOY359 12:38 +/- 2.6 [min.]
radial velocity= 329. +/- 37. [km/sec]

SMM C/P 1988 DOY359 257 +/- Ø degrees

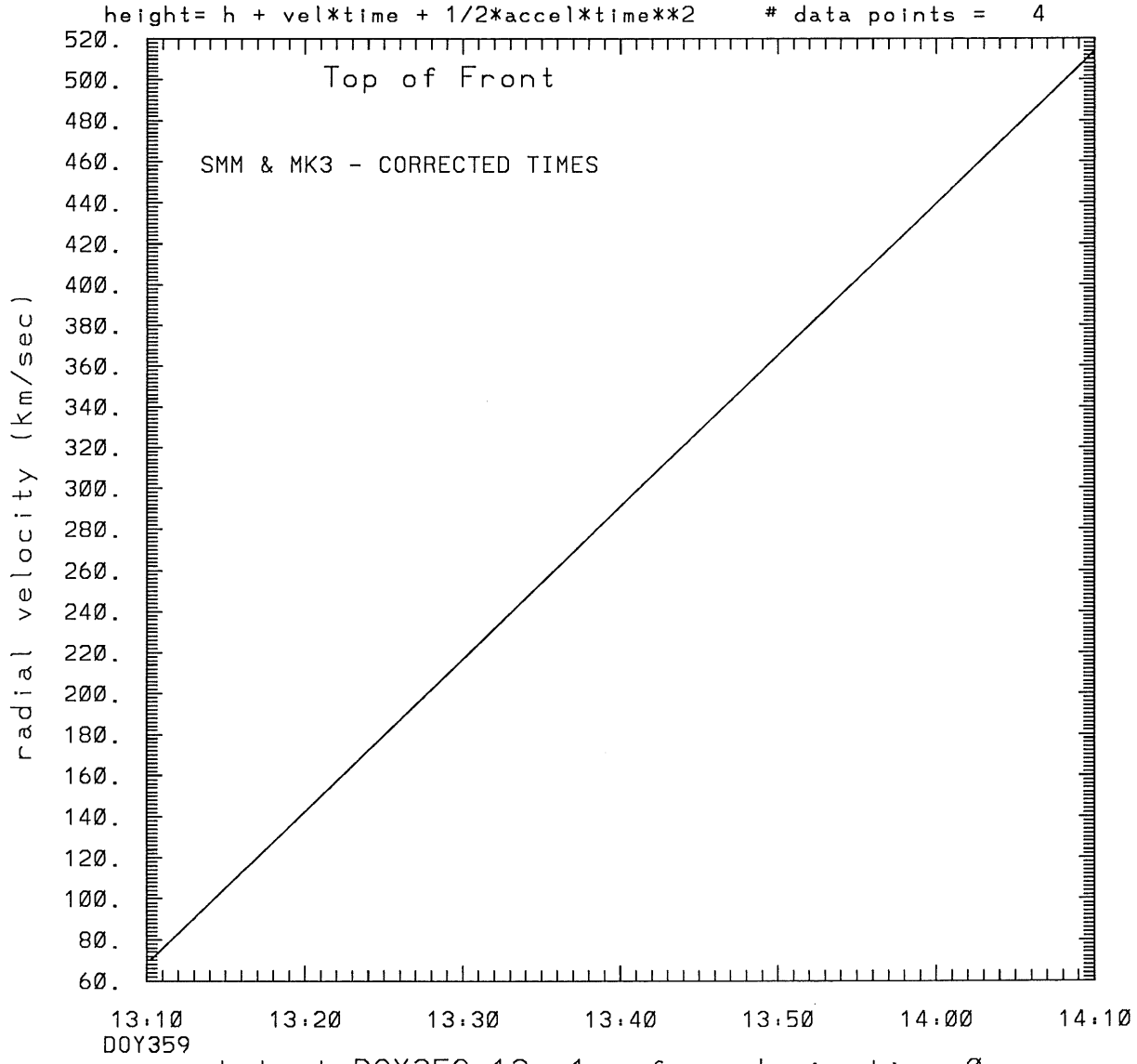


tstart=DOY359 13: 1 from derivative=Ø

Event begins at 2.25 Solar Radii

radial acceleration= Ø.1238 +/- Ø.0322 [km/sec**2]

SMM C/P 1988 DOY359 257 +/- Ø degrees



tstart=DOY359 13: 1 from derivative=Ø

Event begins at 2.25 Solar Radii

radial acceleration=Ø.124E+ØØ km/sec**2

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

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1988	359	13:20:23	2.35	+/- 0.20	257.0	+/- 0.5	SMM
1988	359	13:36:53	2.70	+/- 0.15	257.0	+/- 0.5	SMM
1988	359	13:53:27	3.10	+/- 0.15	257.0	+/- 1.0	SMM
1988	359	14: 9:58	3.80	+/- 0.20	257.0	+/- 1.0	SMM

****
Structure being measured:
Top of ~~Front~~ Loop
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.339E+02 +/- 0.263E+01 [minutes]
In more convenient units:
Event began at DOY 359 12:38 +/- 0.263E+01 [minutes]

Origin defined at DOY359 13:10

RADIAL INFORMATION:

RADIAL VELOCITY = 329. +/- 37. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.196E+01 +/- 0.123E+00 [solar radii]
c(2) = 0.284E-01 +/- 0.317E-02 [radii/min]
c(2) = 0.329E+03 +/- 0.368E+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)= 0.14479E+00 [radii] see Bevington pg. 114
error in c(2)= 0.36443E-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) = 257. +/- 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 13:20 = 0.000E+00 km/sec
The TOTAL velocity at 13:20 = 329. km/sec

The TANGENTIAL velocity at 13:36 = 0.000E+00 km/sec
The TOTAL velocity at 13:36 = 329. km/sec

The TANGENTIAL velocity at 13:53 = 0.000E+00 km/sec
The TOTAL velocity at 13:53 = 329. km/sec

The TANGENTIAL velocity at 14: 9 = 0.000E+00 km/sec
The TOTAL velocity at 14: 9 = 329. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.62
Standard Deviation in start time measurement = 0.185E+02
Error in time = 0.67081E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.107E-01
Reduced Chi Squared = 0.546E-01
Chi Squared = 0.109E+00
The probability for exceeding chi square = 0.989E+00

The correlation coefficient = 0.985E+00
The probability that no LINEAR correlation exists between the variables = 0.1463E-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 359	13:20:23	2.35 +/-	0.20	257.0 +/-	0.5	SMM
1988 359	13:36:53	2.70 +/-	0.15	257.0 +/-	0.5	SMM
1988 359	13:53:27	3.10 +/-	0.15	257.0 +/-	1.0	SMM
1988 359	14: 9:58	3.80 +/-	0.20	257.0 +/-	1.0	SMM

****
Structure being measured:
Top of Front
****

****
OUTPUT:
****

START TIME:

tstart=DOY359 13: 1 from derivative = 0
Event begins at 2.25 Solar Radii
Origin defined at DOY359 13:10

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.124E+00 +/- 0.322E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.228E+01 +/- 0.961E-01 [solar radii]
c(2) = 0.588E-02 +/- 0.600E-02 [radii/min]
c(2) = 0.682E+02 +/- 0.696E+02 [km/sec]
c(3) = 0.320E-03 +/- 0.832E-04 [radii/min**2]
c(3) = 0.124E+00 +/- 0.322E-01 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.11357E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.47253E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.76238E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.37765E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.10606E-03 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.53027E-04 [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) = 257. +/- 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 13:20 = 0.000E+00 km/sec
The TOTAL velocity at 13:20 = 145. km/sec

The TANGENTIAL velocity at 13:36 = 0.000E+00 km/sec
The TOTAL velocity at 13:36 = 268. km/sec

The TANGENTIAL velocity at 13:53 = 0.000E+00 km/sec
The TOTAL velocity at 13:53 = 391. km/sec

The TANGENTIAL velocity at 14: 9 = 0.000E+00 km/sec
The TOTAL velocity at 14: 9 = 514. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.62
Standard Deviation in start time measurement = 0.185E+02
Value of reduced Chi Squared returned from nllst2 = 0.190E-02
Reduced Chi Squared = 0.838E-02
Chi Squared = 0.838E-02
The probability for exceeding chi square = 0.965E+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 = 0.8639E+00
The correlation between the data and the time**2 term = 0.8835E+00
0The correlation between the data and the complete equation of motion = 0.9957E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]