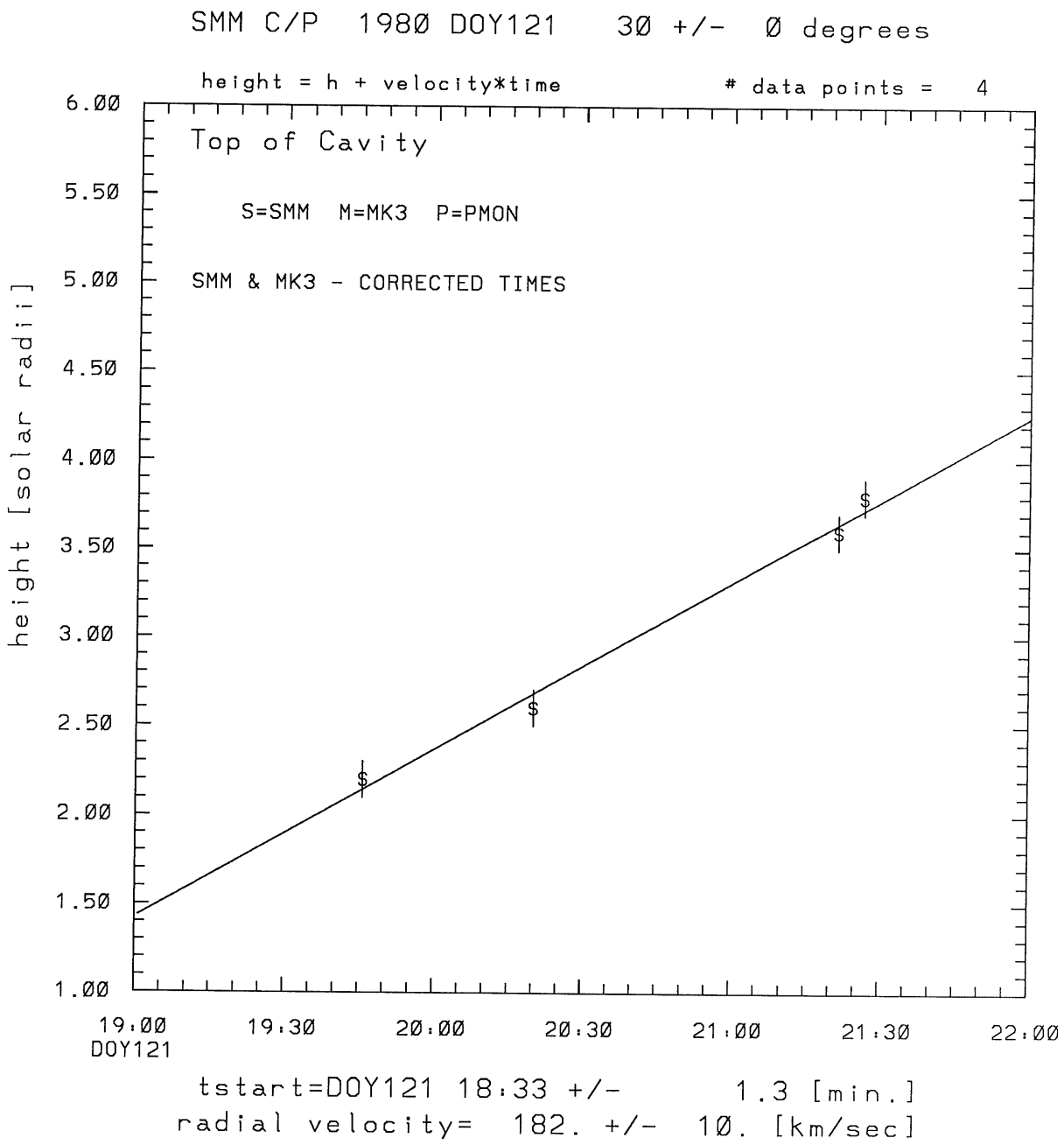
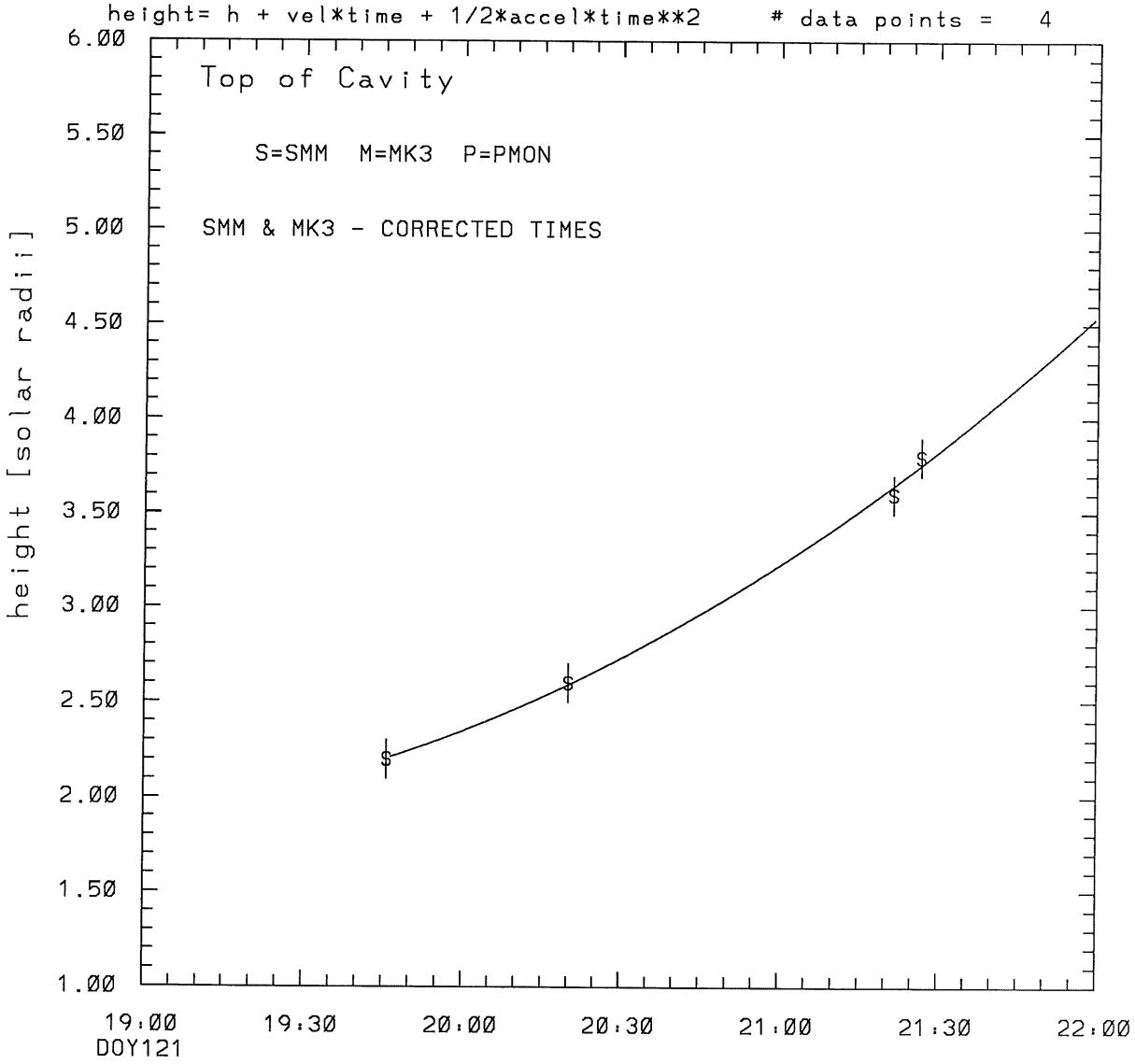

SMM C/P 1980 DOY121 30 +/- 0 degrees
height = h + velocity*time
# data points = 4
Top of Cavity
S=SMM M=MK3 P=PMON
SMM & MK3 - CORRECTED TIMES
height [solar radii]
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
19:00
DOY121
19:30
20:00
20:30
21:00
21:30
22:00
tstart=DOY121 18:33 +/- 1.3 [min.]
radial velocity= 182. +/- 10. [km/sec]

SMM C/P 1980 DOY121 30 +/- 0 degrees

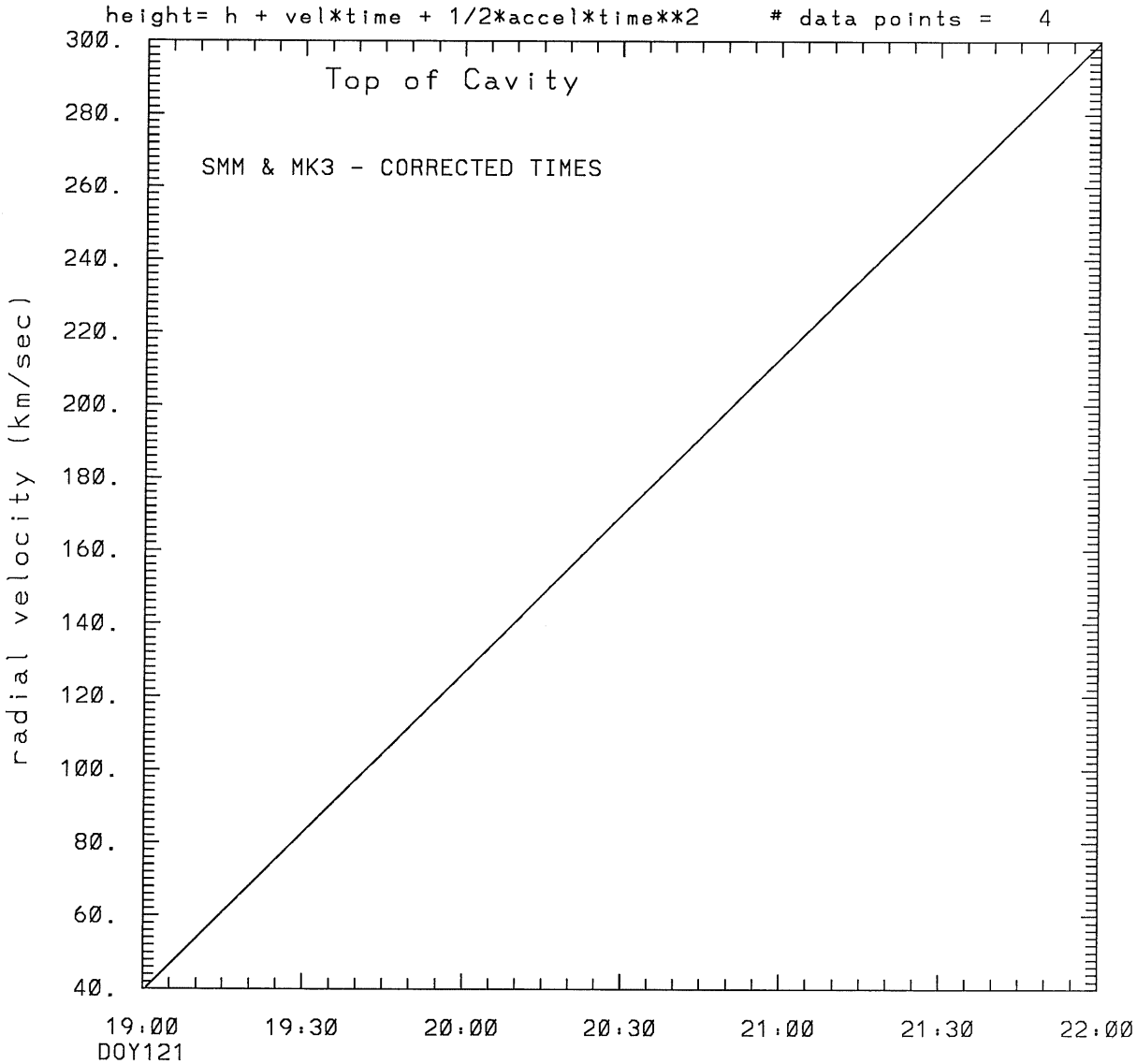


tstart=DOY121 18:33 from derivative=0

Event begins at 1.87 Solar Radii

radial acceleration= 0.0241 +/- 0.0095 [km/sec**2]

SMM C/P 1980 DOY121 30 +/- 0 degrees



tstart=DOY121 18:33 from derivative=0

Event begins at 1.87 Solar Radii

radial acceleration=0.241E-01 km/sec**2

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

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1980	121	19:45:50	2.20	+/- 0.10	30.0	+/- 0.5	SMM
1980	121	20:20: 6	2.60	+/- 0.10	30.0	+/- 0.5	SMM
1980	121	21:21:34	3.60	+/- 0.10	30.0	+/- 1.0	SMM
1980	121	21:26:46	3.80	+/- 0.10	30.0	+/- 1.0	SMM

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

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.270E+02 +/- 0.135E+01 [minutes]
In more convenient units:
Event began at DOY 121 18:33 +/- 0.135E+01 [minutes]

Origin defined at DOY121 19: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 182. +/- 10. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.142E+01 +/- 0.998E-01 [solar radii]
c(2) = 0.157E-01 +/- 0.892E-03 [radii/min]
c(2) = 0.182E+03 +/- 0.103E+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)= 0.12221E+00 [radii] see Bevington pg. 114
error in c(2)= 0.10920E-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) = 30. +/- 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 19:45 = 0.000E+00 km/sec
The TOTAL velocity at 19:45 = 182. km/sec

The TANGENTIAL velocity at 20:20 = 0.000E+00 km/sec
The TOTAL velocity at 20:20 = 182. km/sec

The TANGENTIAL velocity at 21:21 = 0.000E+00 km/sec
The TOTAL velocity at 21:21 = 182. km/sec

The TANGENTIAL velocity at 21:26 = 0.000E+00 km/sec
The TOTAL velocity at 21:26 = 182. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.77
Standard Deviation in start time measurement = 0.424E+02
Error in time = 0.83441E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.572E-02
Reduced Chi Squared = 0.218E-01
Chi Squared = 0.436E-01
The probability for exceeding chi square = 0.994E+00

The correlation coefficient = 0.995E+00
The probability that no LINEAR correlation exists between the variables = 0.4804E-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
1980	121	19:45:50	2.20	+/- 0.10	30.0	+/- 0.5	SMM
1980	121	20:20: 6	2.60	+/- 0.10	30.0	+/- 0.5	SMM
1980	121	21:21:34	3.60	+/- 0.10	30.0	+/- 1.0	SMM
1980	121	21:26:46	3.80	+/- 0.10	30.0	+/- 1.0	SMM

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

****
OUTPUT:
****

START TIME:

tstart=DOY121 18:33 from derivative = 0
Event begins at 1.87 Solar Radii
Origin defined at DOY121 19: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.241E-01 +/- 0.954E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.192E+01 +/- 0.204E+00 [solar radii]
c(2) = 0.340E-02 +/- 0.490E-02 [radii/min]
c(2) = 0.394E+02 +/- 0.568E+02 [km/sec]
c(3) = 0.623E-04 +/- 0.247E-04 [radii/min**2]
c(3) = 0.241E-01 +/- 0.954E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.28906E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.38789E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.69307E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.11200E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.34897E-04 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.68838E-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) = 30. +/- 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 19:45 = 0.000E+00 km/sec
The TOTAL velocity at 19:45 = 106. km/sec

The TANGENTIAL velocity at 20:20 = 0.000E+00 km/sec
The TOTAL velocity at 20:20 = 155. km/sec

The TANGENTIAL velocity at 21:21 = 0.000E+00 km/sec
The TOTAL velocity at 21:21 = 244. km/sec

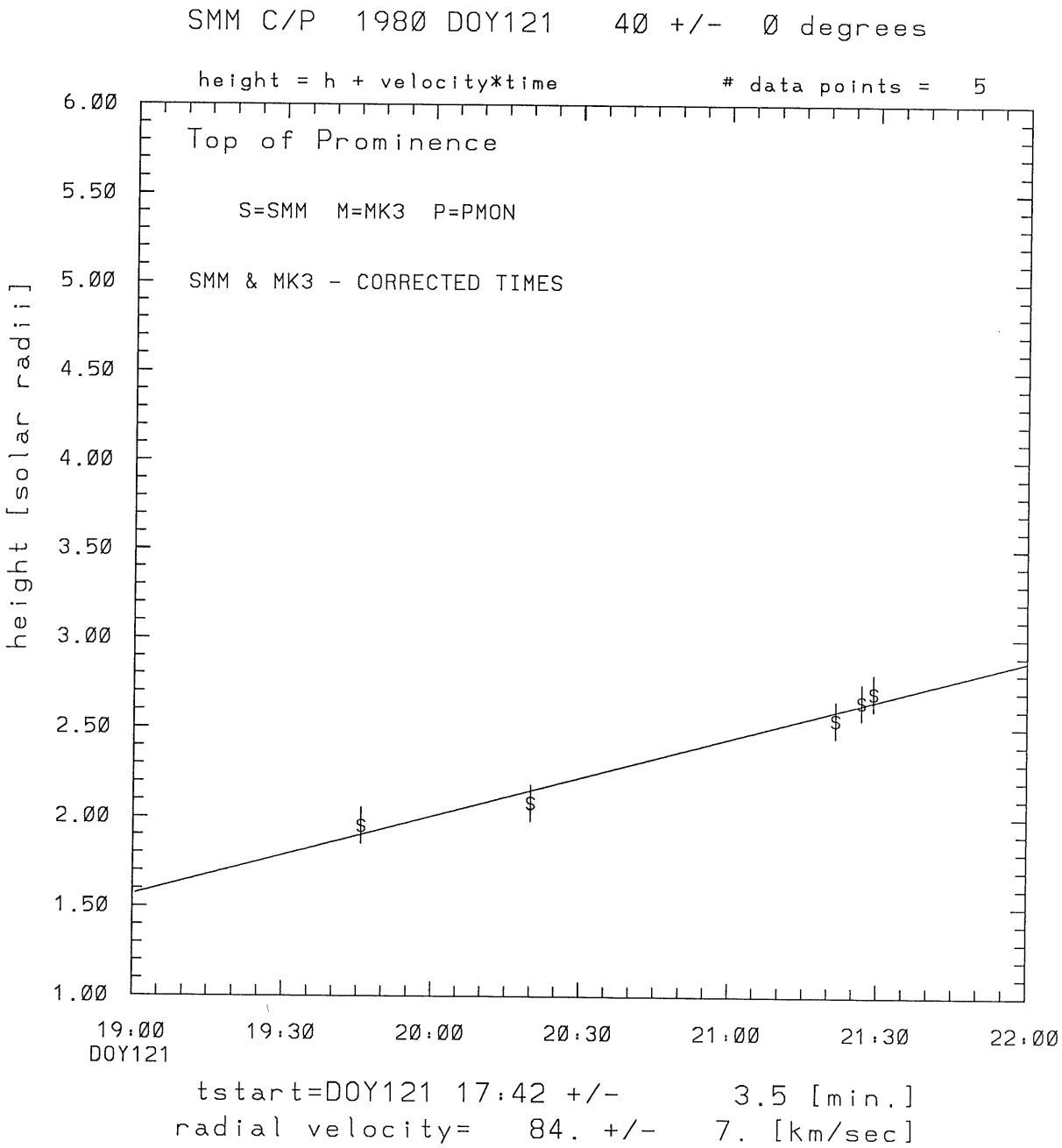
The TANGENTIAL velocity at 21:26 = 0.000E+00 km/sec
The TOTAL velocity at 21:26 = 252. km/sec

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

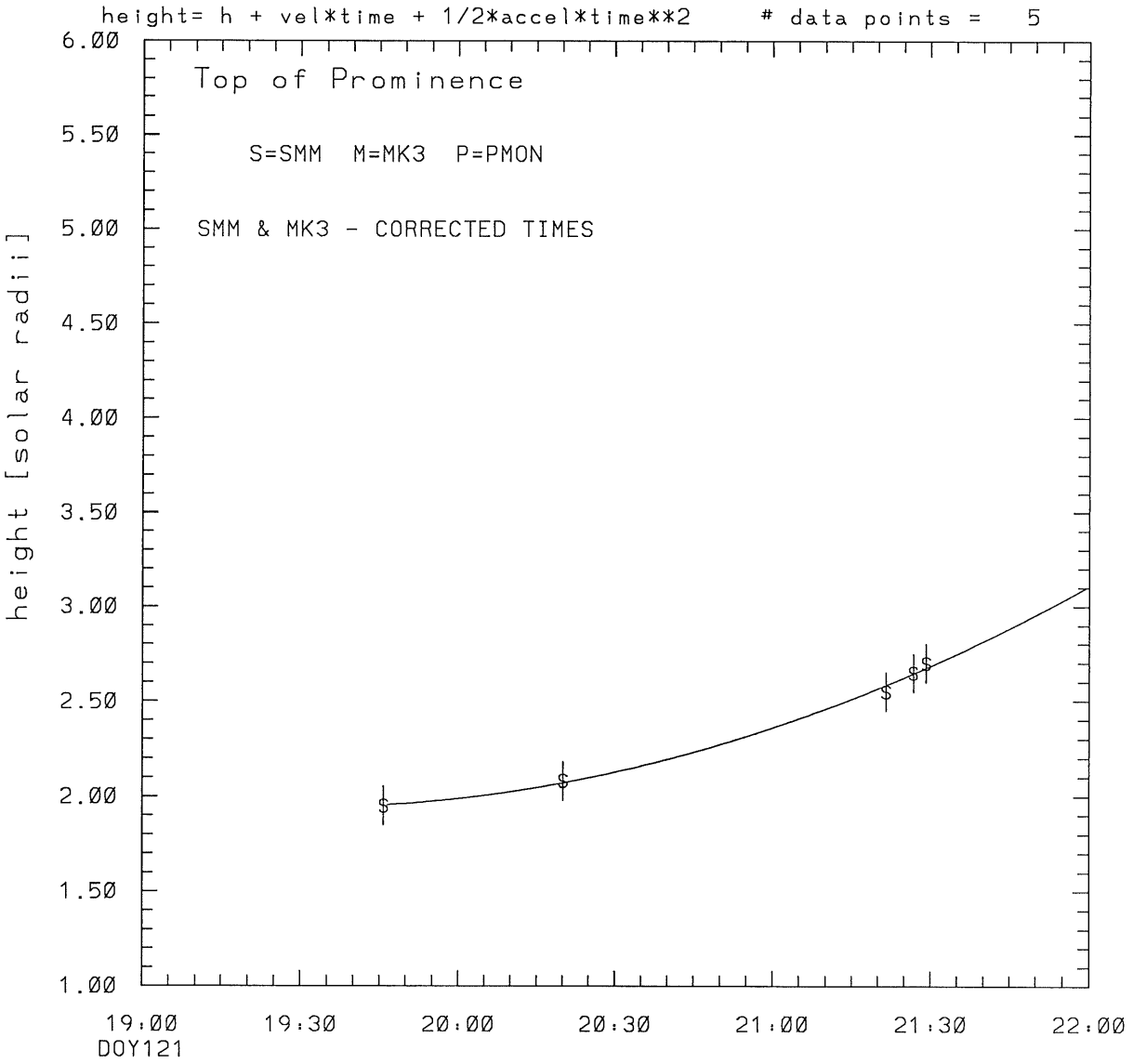
Fit is ok [ier=1]

Standard Deviation in the height = 0.77
Standard Deviation in start time measurement = 0.424E+02
Value of reduced Chi Squared returned from nllst2 = 0.205E-02
Reduced Chi Squared = 0.139E-01
Chi Squared = 0.139E-01
The probability for exceeding chi square = 0.964E+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 = 0.9952E+00
The correlation between the data and the time**2 term = 0.9986E+00
The correlation between the data and the complete equation of motion = 0.9977E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]


SMM C/P 1980 DOY121 40 +/- 0 degrees
height = h + velocity*time
# data points = 5
Top of Prominence
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
19:00
DOY121
19:30
20:00
20:30
21:00
21:30
22:00
tstart=DOY121 17:42 +/- 3.5 [min.]
radial velocity= 84. +/- 7. [km/sec]

SMM C/P 1980 DOY121 40 +/- 0 degrees

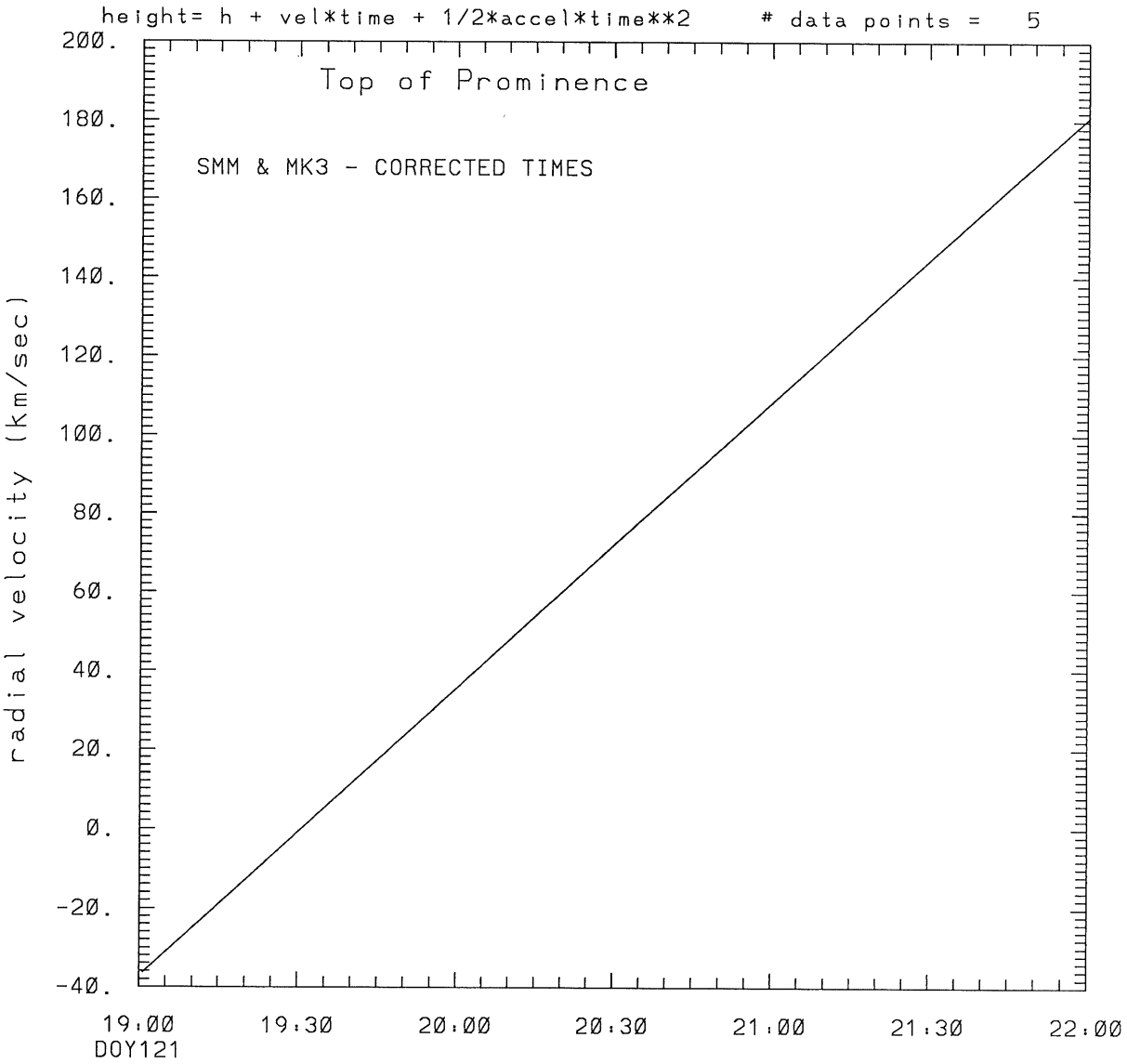


tstart=DOY121 19:30 from derivative=0

Event begins at 1.94 Solar Radii

radial acceleration= 0.0202 +/- 0.0051 [km/sec**2]

SMM C/P 1980 DOY121 40 +/- 0 degrees



tstart=DOY121 19:30 from derivative=0

Event begins at 1.94 Solar Radii

radial acceleration=0.202E-01 km/sec**2

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

****
INPUT:
****

year	doy	time	radii	error in radius	angle	error in angle	datatype
1980	121	19:45:50	1.95	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	20:20: 6	2.08	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	21:21:34	2.55	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	21:26:46	2.65	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	21:29:11	2.70	+/- 0.10	40.0	+/- 0.5	SMM

****
Structure being measured:
Top of Prominence
****

****
OUTPUT:
****

START TIME:

Event began at t = 0 + -0.782E+02 +/- 0.349E+01 [minutes]
In more convenient units:
Event began at DOY 121 17:42 +/- 0.349E+01 [minutes]

Origin defined at DOY121 19: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 84. +/- 7. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.157E+01 +/- 0.701E-01 [solar radii]
c(2) = 0.726E-02 +/- 0.582E-03 [radii/min]
c(2) = 0.842E+02 +/- 0.676E+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)= 0.80901E-01 [radii] see Bevington pg. 114
error in c(2)= 0.67252E-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) = 40. +/- 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 19:45 = 0.000E+00 km/sec
The TOTAL velocity at 19:45 = 84. km/sec

The TANGENTIAL velocity at 20:20 = 0.000E+00 km/sec
The TOTAL velocity at 20:20 = 84. km/sec

The TANGENTIAL velocity at 21:21 = 0.000E+00 km/sec
The TOTAL velocity at 21:21 = 84. km/sec

The TANGENTIAL velocity at 21:26 = 0.000E+00 km/sec
The TOTAL velocity at 21:26 = 84. km/sec

The TANGENTIAL velocity at 21:29 = 0.000E+00 km/sec
The TOTAL velocity at 21:29 = 84. 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 = 0.421E+02
Error in time = 0.15102E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.301E-02
Reduced Chi Squared = 0.105E-01
Chi Squared = 0.315E-01
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.987E+00
The probability that no LINEAR correlation exists between the variables = 0.1701E-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
1980	121	19:45:50	1.95	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	20:20: 6	2.08	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	21:21:34	2.55	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	21:26:46	2.65	+/- 0.10	40.0	+/- 0.5	SMM
1980	121	21:29:11	2.70	+/- 0.10	40.0	+/- 0.5	SMM

****
Structure being measured:
Top of Prominence
****

****
OUTPUT:
****

START TIME:

tstart=DOY121 19:30 from derivative = 0
Event begins at 1.94 Solar Radii
Origin defined at DOY121 19: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.202E-01 +/- 0.507E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.199E+01 +/- 0.111E+00 [solar radii]
c(2) = -0.321E-02 +/- 0.264E-02 [radii/min]
c(2) = -0.372E+02 +/- 0.307E+02 [km/sec]
c(3) = 0.522E-04 +/- 0.131E-04 [radii/min**2]
c(3) = 0.202E-01 +/- 0.507E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.13625E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.23562E-01 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.32374E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.63809E-03 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.16071E-04 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.32817E-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) = 40. +/- 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 19:45 = 0.000E+00 km/sec
The TOTAL velocity at 19:45 = 18. km/sec

The TANGENTIAL velocity at 20:20 = 0.000E+00 km/sec
The TOTAL velocity at 20:20 = 60. km/sec

The TANGENTIAL velocity at 21:21 = 0.000E+00 km/sec
The TOTAL velocity at 21:21 = 134. km/sec

The TANGENTIAL velocity at 21:26 = 0.000E+00 km/sec
The TOTAL velocity at 21:26 = 141. km/sec

The TANGENTIAL velocity at 21:29 = 0.000E+00 km/sec
The TOTAL velocity at 21:29 = 144. 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 = 0.421E+02
Value of reduced Chi Squared returned from nllst2 = 0.638E-03
Reduced Chi Squared = 0.341E-02
Chi Squared = 0.681E-02
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 = 0.9874E+00
The correlation between the data and the time**2 term = 0.9970E+00
The correlation between the data and the complete equation of motion = 0.9960E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]