SMM C/P   1987 DOY217   65 +/-   0 degrees

height = h + velocity*time   # data points =   6

Top of ~~Front~~ Cloud

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
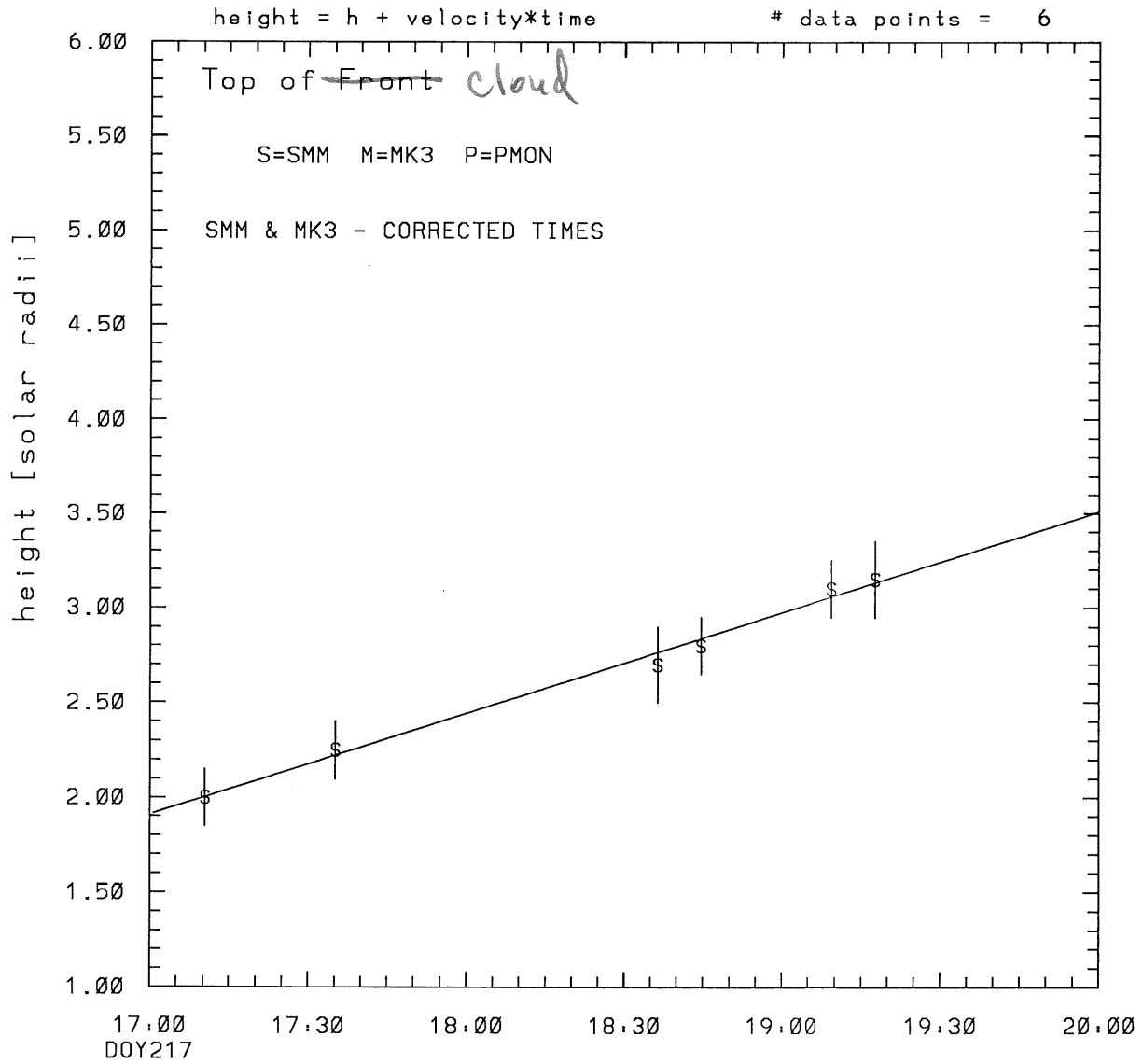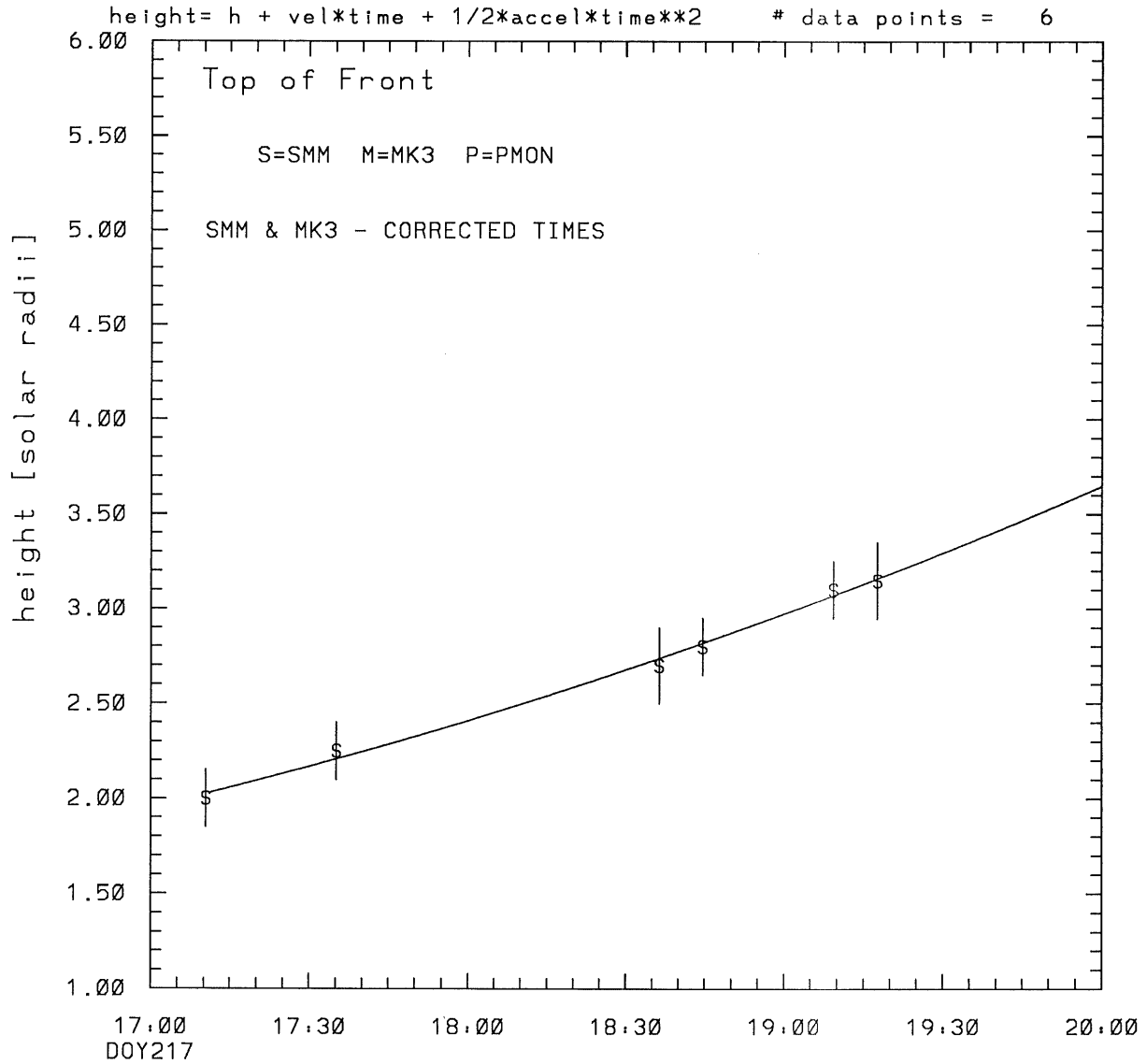2.00
1.50
1.00

17:00   17:30   18:00   18:30   19:00   19:30   20:00
DOY217

tstart=DOY217 15:19 +/-   0.7 [min.]
radial velocity=   103. +/-   4. [km/sec]

SMM C/P   1987 DOY217   65 +/-   Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   6

Top of Front

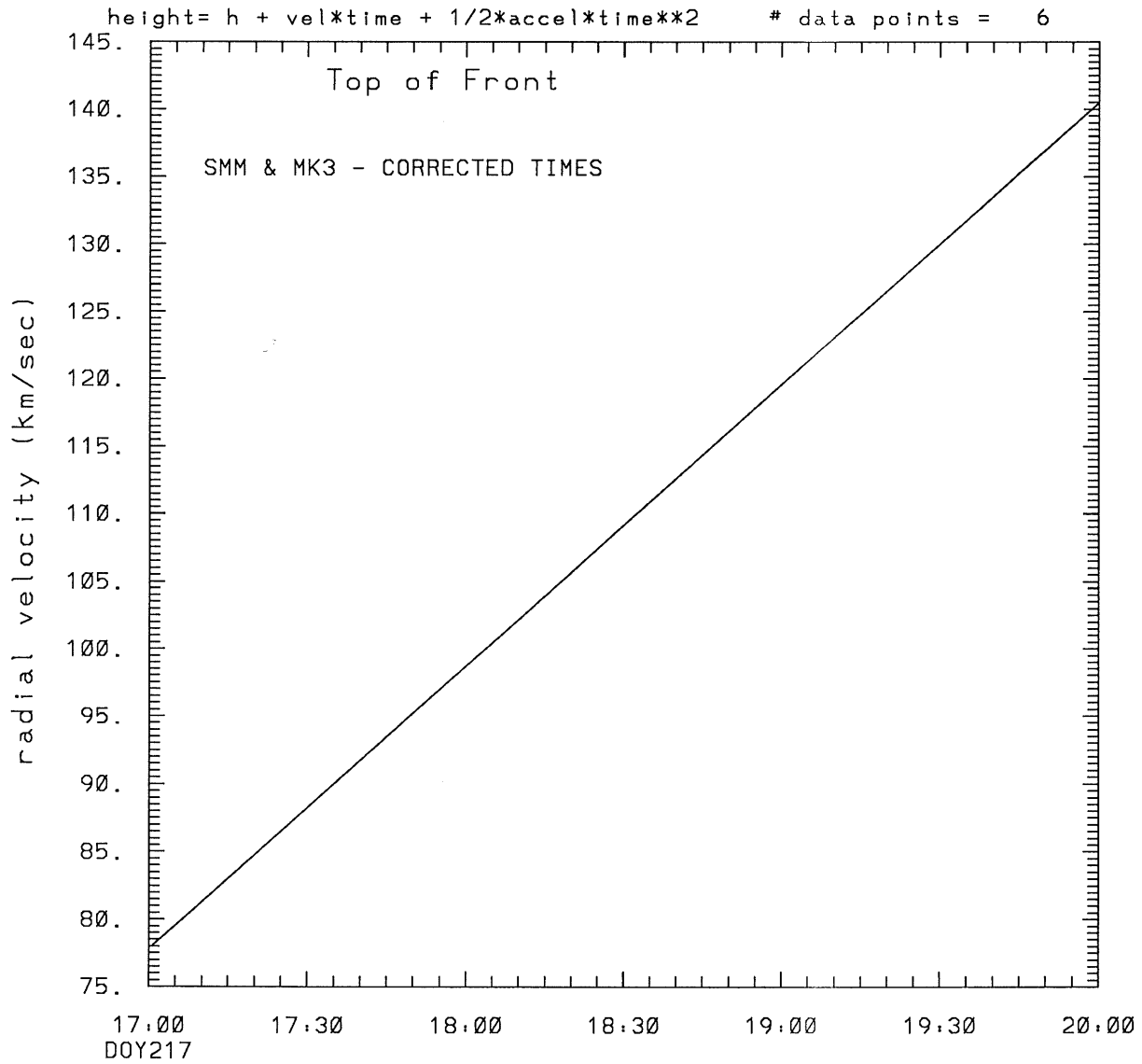S=SMM   M=MK3   P=PMON

SMM & MK3 - CORRECTED TIMES

tstart=DOY217 13:17   from derivative=Ø
Event begins at   1.20 Solar Radii
radial acceleration= Ø.ØØ58 +/- Ø.ØØ42 [km/sec**2]

SMM C/P   1987 DOY217   65 +/-   0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   6

Top of Front

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

145.
140.
135.
130.
125.
120.
115.
110.
105.
100.
95.
90.
85.
80.
75.

17:00   17:30   18:00   18:30   19:00   19:30   20:00
DOY217

tstart=DOY217 13:17   from derivative=0
Event begins at   1.20 Solar Radii
radial acceleration=0.580E-02   km/sec**2

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


*******
 INPUT:
*******
```

			error in	error in	
year doy	time	radii radius	angle	angle	datatype
1987 217	17:10:26	2.00 +/- 0.15	65.0 +/-	0.5	SMM
1987 217	17:35:11	2.25 +/- 0.15	65.0 +/-	0.5	SMM
1987 217	18:36:24	2.70 +/- 0.20	65.0 +/-	0.5	SMM
1987 217	18:44:39	2.80 +/- 0.15	65.0 +/-	0.5	SMM
1987 217	19: 9:24	3.10 +/- 0.15	65.0 +/-	1.0	SMM
1987 217	19:17:40	3.15 +/- 0.20	65.0 +/-	1.0	SMM

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


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


START TIME:

Event began at t = 0 + -0.103E+03 +/-  0.721E+00 [minutes]
In more convenient units:
Event began at DOY 217 15:19 +/-  0.721E+00 [minutes]


Origin defined at DOY217 17: 0

RADIAL INFORMATION:

RADIAL VELOCITY =    103. +/-     4. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =    0.191E+01 +/-    0.312E-01 [solar radii]
c(2) =    0.888E-02 +/-    0.333E-03 [radii/min]
c(2) =    0.103E+03 +/-    0.386E+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)= 0.39393E-01 [radii] see Bevington pg. 114
            error in c(2)= 0.40315E-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) = 65. +/-   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 17:10 = 0.000E+00 km/sec
The TOTAL velocity at 17:10 = 103. km/sec

The TANGENTIAL velocity at 17:35 = 0.000E+00 km/sec
The TOTAL velocity at 17:35 = 103. km/sec

The TANGENTIAL velocity at 18:36 = 0.000E+00 km/sec
The TOTAL velocity at 18:36 = 103. km/sec

The TANGENTIAL velocity at 18:44 = 0.000E+00 km/sec
The TOTAL velocity at 18:44 = 103. km/sec

The TANGENTIAL velocity at 19: 9 = 0.000E+00 km/sec
The TOTAL velocity at 19: 9 = 103. km/sec

The TANGENTIAL velocity at 19:17 = 0.000E+00 km/sec
The TOTAL velocity at 19:17 = 103. km/sec

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

 Fit is ok [ier=1]

 Standard Deviation in the height = 0.46
 Standard Deviation in start time measurement =   0.471E+02
 Error in time =   0.10476E+02 using best fit method
 See Taylor Error Analysis [Univ of Colorado] pg.78

 Value of reduced Chi Squared returned from nllst2 = 0.155E-02
 Reduced Chi Squared = 0.776E-02
 Chi Squared = 0.310E-01
 The probability for exceeding chi square = 0.100E+01

 The correlation coefficient =   0.996E+00
 The probability that no LINEAR correlation exists between the variables =   0.2467E-04
 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
1987 217	17:10:26	2.00 +/-	0.15	65.0 +/-	0.5	SMM
1987 217	17:35:11	2.25 +/-	0.15	65.0 +/-	0.5	SMM
1987 217	18:36:24	2.70 +/-	0.20	65.0 +/-	0.5	SMM
1987 217	18:44:39	2.80 +/-	0.15	65.0 +/-	0.5	SMM
1987 217	19: 9:24	3.10 +/-	0.15	65.0 +/-	1.0	SMM
1987 217	19:17:40	3.15 +/-	0.20	65.0 +/-	1.0	SMM

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


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


START TIME:


tstart=DOY217 13:17 from derivative = 0
Event begins at   1.20 Solar Radii
 Origin defined at DOY217 17: 0


RADIAL INFORMATION:


RADIAL ACCELERATION =  0.580E-02 +/-  0.420E-02 km/sec**2


The computed RADIAL coefficients and errors FROM NLLST2 are:


c(1) =    0.195E+01 +/-   0.421E-01 [solar radii]
c(2) =    0.671E-02 +/-   0.160E-02 [radii/min]
c(2) =    0.778E+02 +/-   0.185E+02 [km/sec]
c(3) =    0.150E-04 +/-   0.109E-04 [radii/min**2]
c(3) =    0.580E-02 +/-   0.420E-02 [km/sec**2]


The computed ERRORS in coefficients [BEVINGTON] are:


        Approximate error in c(1) = 0.50361E-01 [radii] Bevington pg 154 (8-30)
            Exact error in c(1) = 0.17105E-01 [radii] Bevington pg 154 (8-28)
        Approximate error in c(2) = 0.17739E-02 [radii/min] Bevington pg 154 (8-30)
            Exact error in c(2) = 0.55524E-03 [radii/min] Bevington pg 154 (8-28)
        Approximate error in c(3) = 0.11803E-04 [radii/min**] Bevington pg 154 (8-30)
            Exact error in c(3) = 0.35055E-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) = 65. +/- 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 17:10 = 0.000E+00 km/sec
The TOTAL velocity at 17:10 = 81. km/sec

The TANGENTIAL velocity at 17:35 = 0.000E+00 km/sec
The TOTAL velocity at 17:35 = 90. km/sec

The TANGENTIAL velocity at 18:36 = 0.000E+00 km/sec
The TOTAL velocity at 18:36 = 111. km/sec

The TANGENTIAL velocity at 18:44 = 0.000E+00 km/sec
The TOTAL velocity at 18:44 = 114. km/sec

The TANGENTIAL velocity at 19: 9 = 0.000E+00 km/sec
The TOTAL velocity at 19: 9 = 123. km/sec

The TANGENTIAL velocity at 19:17 = 0.000E+00 km/sec
The TOTAL velocity at 19:17 = 126. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.46
Standard Deviation in start time measurement = 0.471E+02
Value of reduced Chi Squared returned from nllst2 = 0.131E-02
Reduced Chi Squared = 0.493E-02
Chi Squared = 0.148E-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 = 0.1027E+01
The correlation between the data and the time**2 term = 0.9970E+00
The correlation between the data and the complete equation of motion = 0.9962E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]