SMM C/P 1980 DOY107 120 +/- 0 degrees

height = h + velocity*time   # data points =   5

Top of ~~Fuzzy~~ Front [Late in Event]

First 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

15:00   16:00   17:00   18:00   19:00   20:00   21:00
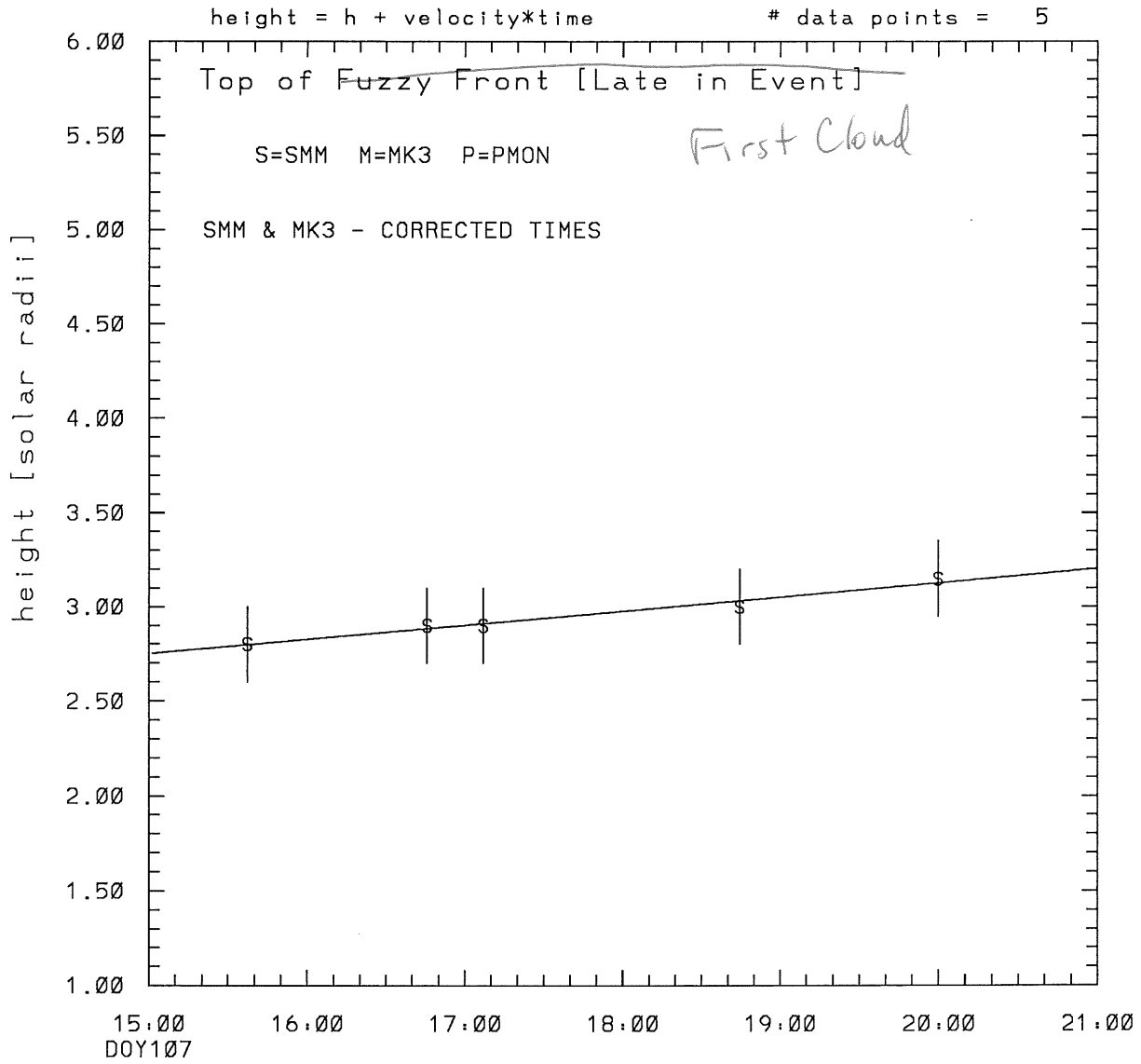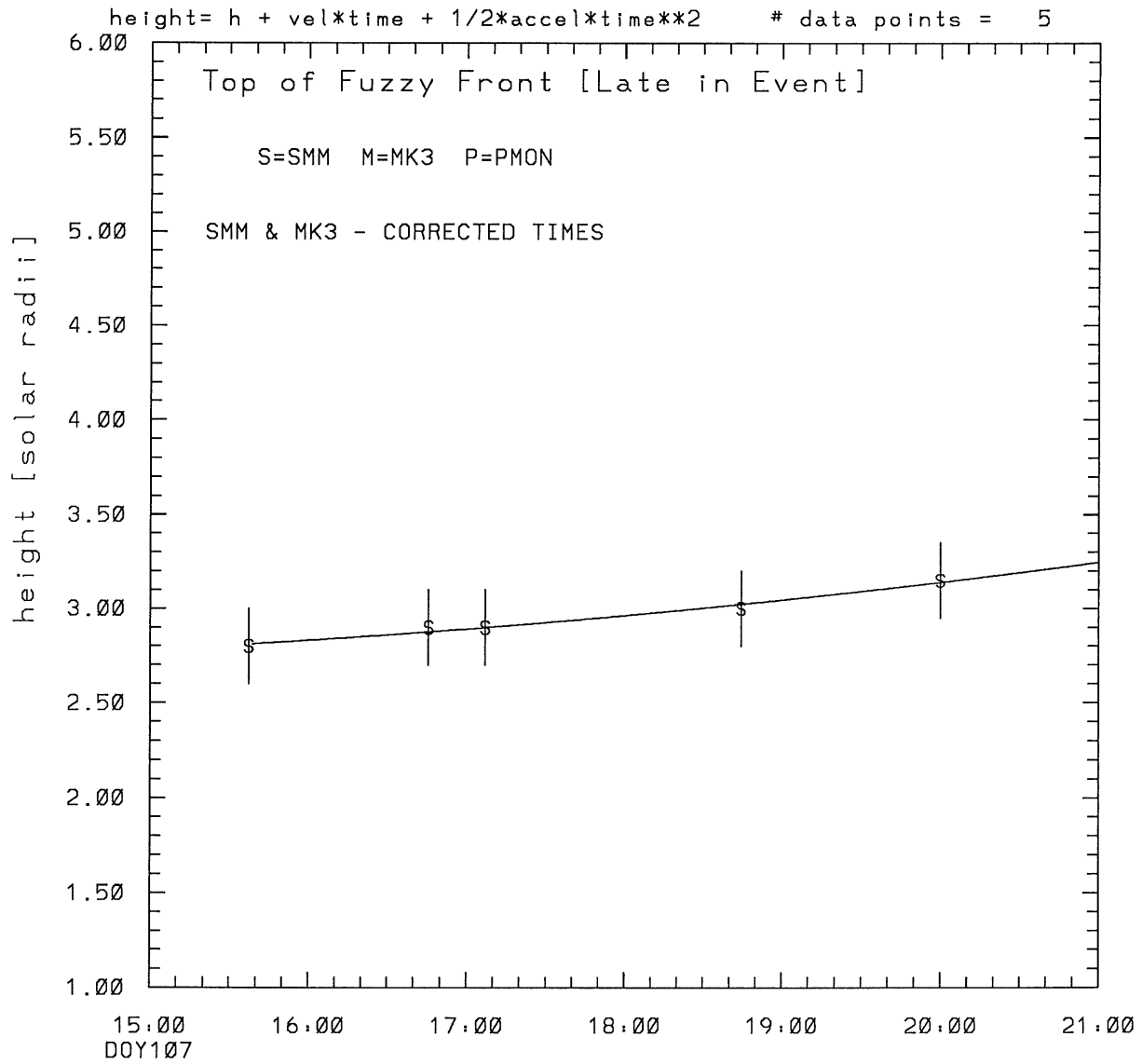DOY107

tstart=DOY106 15:53 +/-   41.2 [min.]
radial velocity=   15. +/-   1. [km/sec]

SMM C/P 1980 DOY107 120 +/- 0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   5

Top of Fuzzy Front [Late in Event]

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

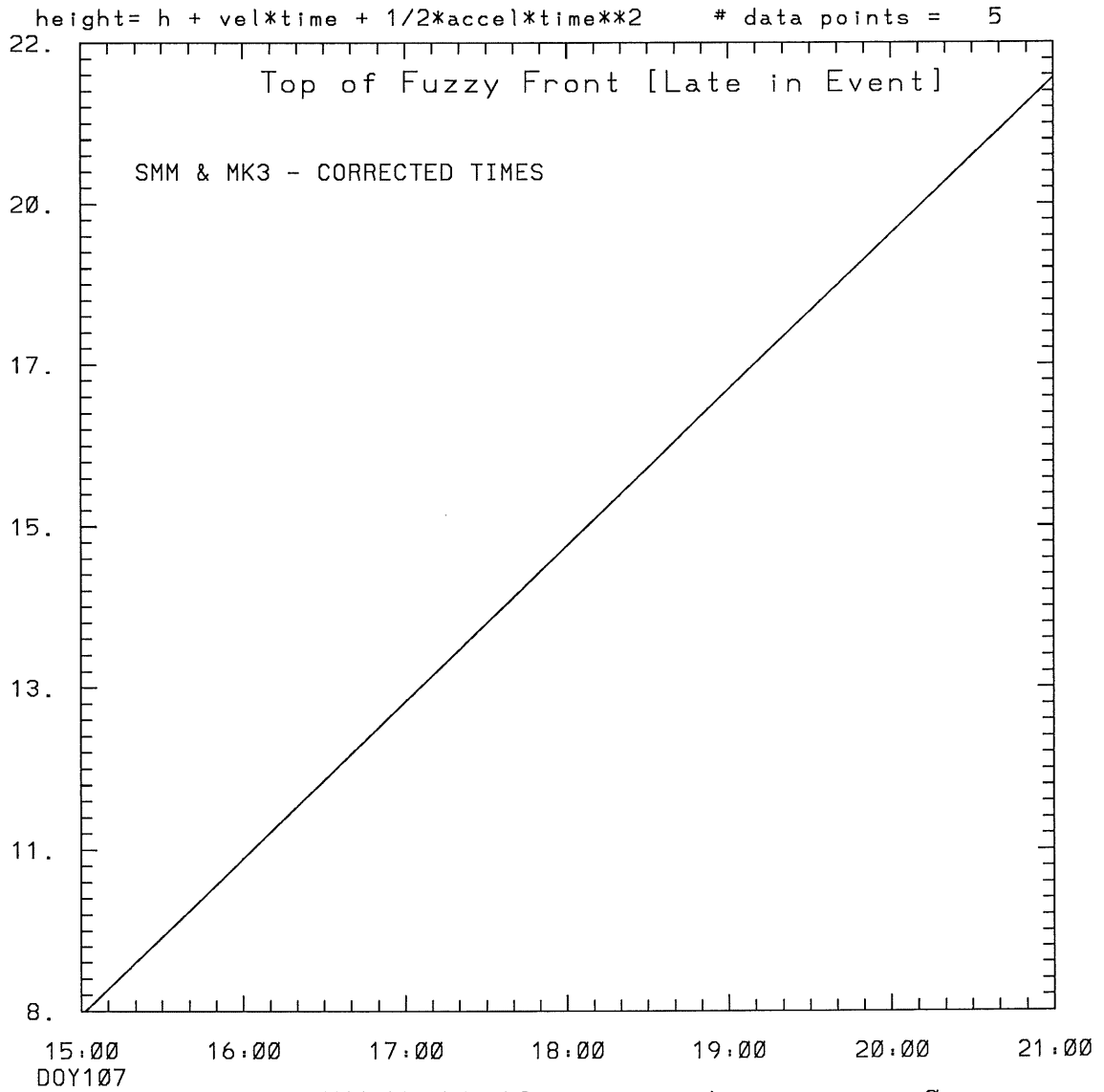15:00   16:00   17:00   18:00   19:00   20:00   21:00
DOY107

tstart=DOY107 11:13   from derivative=0
Event begins at   2.70 Solar Radii
radial acceleration= 0.0006 +/- 0.0005 [km/sec**2]

SMM C/P 1980 DOY107 120 +/- 0 degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   5

Top of Fuzzy Front [Late in Event]

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

tstart=DOY107 11:13   from derivative=0
Event begins at   2.70 Solar Radii
radial acceleration=0.610E-03 km/sec**2

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


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

year doy	time	radii	error in radius	angle	error in angle	datatype
1980 107	15:37:16	2.80	+/- 0.20	120.0	+/- 0.5	SMM
1980 107	16:45:39	2.90	+/- 0.20	120.0	+/- 0.5	SMM
1980 107	17: 7: 3	2.90	+/- 0.20	120.0	+/- 0.5	SMM
1980 107	18:44:34	3.00	+/- 0.20	120.0	+/- 1.0	SMM
1980 107	19:59:55	3.15	+/- 0.20	120.0	+/- 1.0	SMM

```
*****************************************
 Structure being measured:
Top of Fuzzy Front [Late in Event]
*****************************************


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


START TIME:


Event began at t = 0 + -0.139E+04 +/-  0.412E+02 [minutes]
In more convenient units:
Event began at DOY 106 15:53 +/-  0.412E+02 [minutes]


Origin defined at DOY107 15: 0


RADIAL INFORMATION:


RADIAL VELOCITY =    15. +/-     1. km/sec


The computed RADIAL coefficients and errors FROM NLLST2 are:


c(1) =    0.275E+01 +/-    0.197E-01 [solar radii]
c(2) =    0.126E-02 +/-    0.107E-03 [radii/min]
c(2) =    0.146E+02 +/-    0.124E+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)= 0.22768E-01 [radii] see Bevington pg. 114
        error in c(2)= 0.12381E-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) = 120. +/-   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 15:37 = 0.000E+00 km/sec
The TOTAL velocity at 15:37 =   15. km/sec

The TANGENTIAL velocity at 16:45 = 0.000E+00 km/sec
The TOTAL velocity at 16:45 =   15. km/sec

The TANGENTIAL velocity at 17: 7 = 0.000E+00 km/sec
The TOTAL velocity at 17: 7 =   15. km/sec

The TANGENTIAL velocity at 18:44 = 0.000E+00 km/sec
The TOTAL velocity at 18:44 =   15. km/sec

The TANGENTIAL velocity at 19:59 = 0.000E+00 km/sec
The TOTAL velocity at 19:59 =   15. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.13
Standard Deviation in start time measurement =   0.926E+02
Error in time =   0.35225E+02 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.493E-03
Reduced Chi Squared = 0.255E-02
Chi Squared = 0.766E-02
The probability for exceeding chi square = 0.100E+01

The correlation coefficient =   0.986E+00
The probability that no LINEAR correlation exists between the variables =   0.2022E-02
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
1980	107	15:37:16	2.80 +/- 0.20		120.0 +/- 0.5		SMM
1980	107	16:45:39	2.90 +/- 0.20		120.0 +/- 0.5		SMM
1980	107	17: 7: 3	2.90 +/- 0.20		120.0 +/- 0.5		SMM
1980	107	18:44:34	3.00 +/- 0.20		120.0 +/- 1.0		SMM
1980	107	19:59:55	3.15 +/- 0.20		120.0 +/- 1.0		SMM

```
*****************************************
 Structure being measured:
 Top of Fuzzy Front [Late in Event]
*****************************************
```

```
********
 OUTPUT:
********
```

START TIME:

tstart=DOY107 11:13 from derivative = 0
Event begins at 2.70 Solar Radii
 Origin defined at DOY107 15: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.610E-03 +/- 0.524E-03 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) =$ 0.278E+01 +/-   0.339E-01 [solar radii]
$c(2) =$ 0.718E-03 +/-   0.477E-03 [radii/min]
$c(2) =$ 0.833E+01 +/-   0.553E+01 [km/sec]
$c(3) =$ 0.158E-05 +/-   0.136E-05 [radii/min**2]
$c(3) =$ 0.610E-03 +/-   0.524E-03 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

  Approximate error in $c(1) =$ 0.41531E-01 [radii] Bevington pg 154 (8-30)
    Exact error in $c(1) =$ 0.13003E-01 [radii] Bevington pg 154 (8-28)
  Approximate error in $c(2) =$ 0.58395E-03 [radii/min] Bevington pg 154 (8-30)
    Exact error in $c(2) =$ 0.14854E-03 [radii/min] Bevington pg 154 (8-28)
  Approximate error in $c(3) =$ 0.16596E-05 [radii/min**] Bevington pg 154 (8-30)
    Exact error in $c(3) =$ 0.37952E-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) = 120. +/-   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 15:37 = 0.000E+00 km/sec
The TOTAL velocity at 15:37 =   10. km/sec

The TANGENTIAL velocity at 16:45 = 0.000E+00 km/sec
The TOTAL velocity at 16:45 =   12. km/sec

The TANGENTIAL velocity at 17: 7 = 0.000E+00 km/sec
The TOTAL velocity at 17: 7 =   13. km/sec

The TANGENTIAL velocity at 18:44 = 0.000E+00 km/sec
The TOTAL velocity at 18:44 =   17. km/sec

The TANGENTIAL velocity at 19:59 = 0.000E+00 km/sec
The TOTAL velocity at 19:59 =   19. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.13
Standard Deviation in start time measurement =   0.926E+02
Value of reduced Chi Squared returned from nllst2 = 0.452E-03
Reduced Chi Squared = 0.199E-02
Chi Squared = 0.399E-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 = 0.9858E+00
The correlation between the data and the time**2 term = 0.9828E+00
The correlation between the data and the complete equation of motion = 0.9806E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]