SMM C/P   1988 DOY146   245 +/-   0 degrees

height = h + velocity*time   # data points =   4

6.00

Top of Filled Front   [Late in Event]
LOOP

5.50

S=SMM   M=MK3   P=PMON

5.00

SMM & MK3 - CORRECTED TIMES

height [solar radii]

4.50

4.00 $

                                                          $
3.50

3.00 $

2.50

2.00 $

1.50

1.00
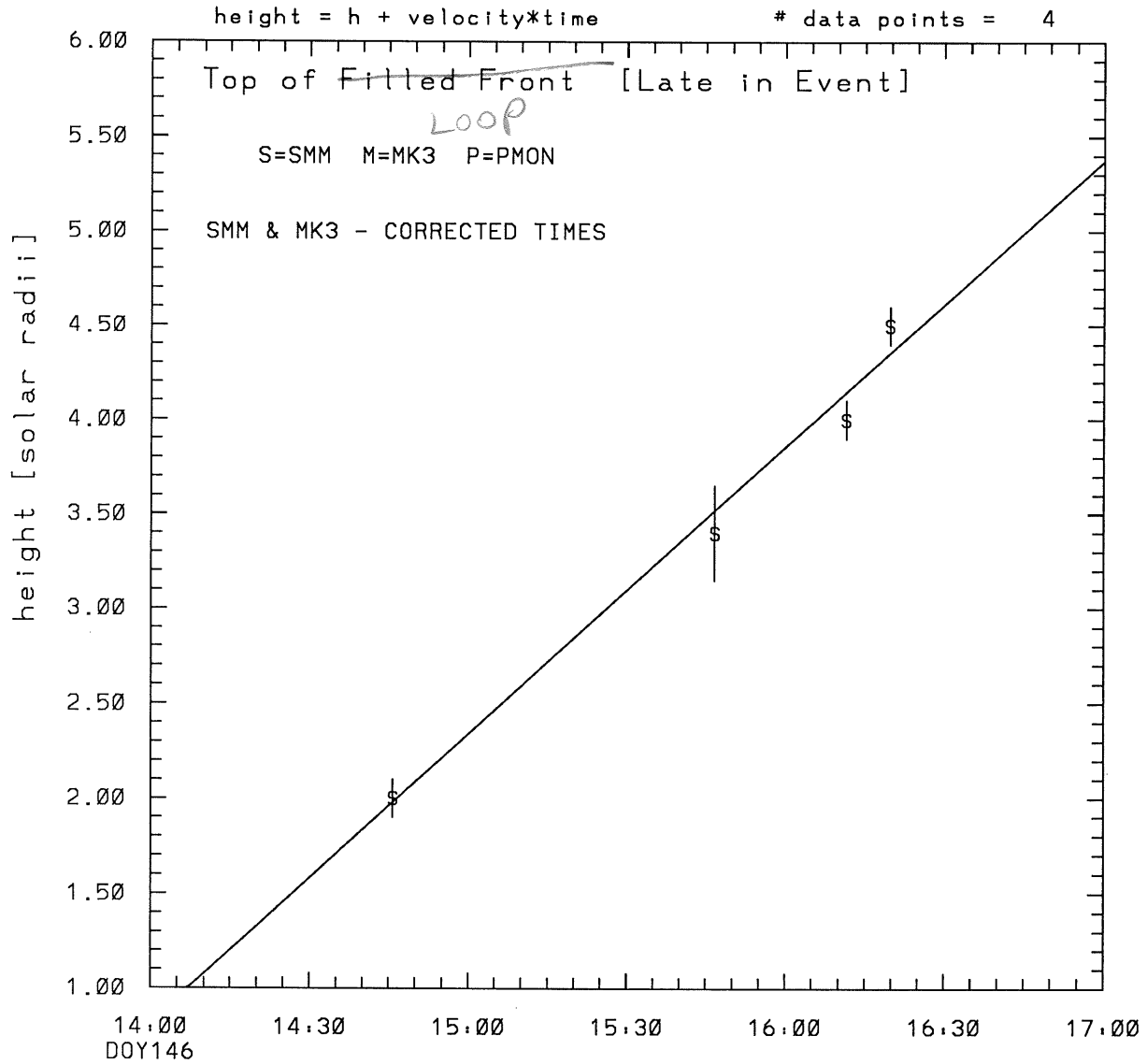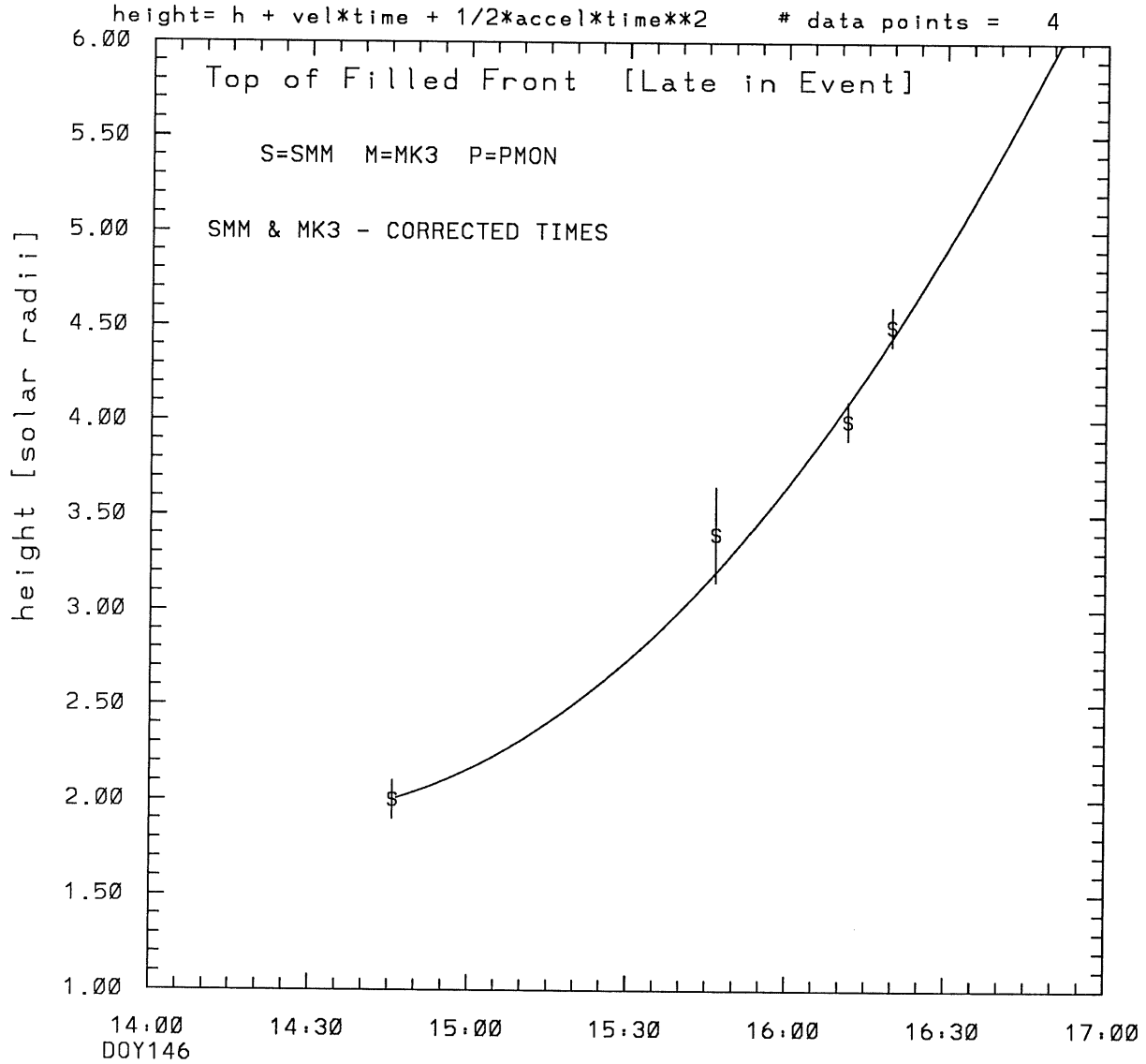   14:00   14:30   15:00   15:30   16:00   16:30   17:00
   DOY146

tstart=DOY146 14: 7 +/-   0.4 [min.]
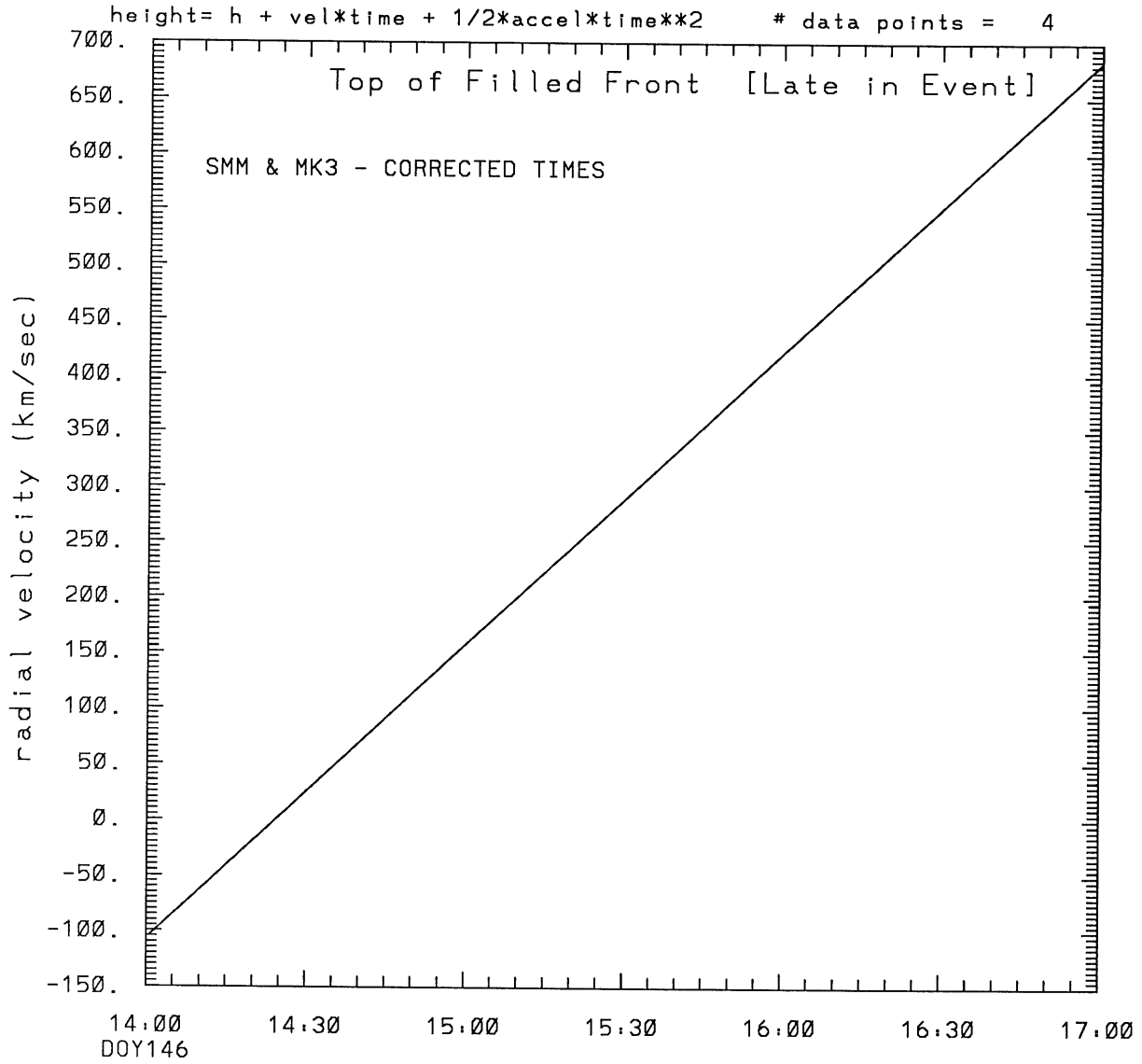radial velocity=   293. +/- 19. [km/sec]

SMM C/P 1988 DOY146 245 +/- Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   4

Top of Filled 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

14:00 14:30 15:00 15:30 16:00 16:30 17:00
DOY146

tstart=DOY146 14:24   from derivative=Ø
Event begins at   1.92 Solar Radii
radial acceleration= Ø.Ø732 +/- Ø.Ø428 [km/sec**2]

SMM C/P 1988 DOY146 245 +/- Ø degrees

height= h + vel*time + 1/2*accel*time**2   # data points =   4

Top of Filled Front [Late in Event]

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

700.
650.
600.
550.
500.
450.
400.
350.
300.
250.
200.
150.
100.
50.
Ø.
-50.
-100.
-150.

14:00   14:30   15:00   15:30   16:00   16:30   17:00
DOY146

tstart=DOY146 14:24   from derivative=Ø
Event begins at   1.92 Solar Radii
radial acceleration=Ø.732E-Ø1 km/sec**2

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


*******
 INPUT:
*******


                        error in        error in
year doy    time    radii  radius    angle  angle   datatype
1988 146  14:45:49  2.00 +/- 0.10   245.0 +/-  0.5     SMM
1988 146  15:46:44  3.40 +/- 0.25   245.0 +/-  1.0     SMM
1988 146  16:11:30  4.00 +/- 0.10   245.0 +/-  1.0     SMM
1988 146  16:19:45  4.50 +/- 0.10   245.0 +/-  1.0     SMM


******************************************
 Structure being measured:
Top of Filled Front [Late in Event]
******************************************
                        Loop

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


START TIME:


Event began at t = 0 +  0.702E+01 +/-  0.387E+00 [minutes]
In more convenient units:
Event began at DOY 146 14: 7 +/-  0.387E+00 [minutes]


Origin defined at DOY146 14: 0


RADIAL INFORMATION:


RADIAL VELOCITY =   293. +/-    19. km/sec


The computed RADIAL coefficients and errors FROM NLLST2 are:


c(1) =   0.822E+00 +/-   0.189E+00 [solar radii]
c(2) =   0.253E-01 +/-   0.167E-02 [radii/min]
c(2) =   0.293E+03 +/-   0.194E+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)= 0.25797E+00 [radii] see Bevington pg. 114
        error in c(2)= 0.23002E-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) = 245. +/-   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 14:45 =   0. km/sec
The TOTAL velocity at 14:45 = 293. km/sec

The TANGENTIAL velocity at 15:46 =   0. km/sec
The TOTAL velocity at 15:46 = 293. km/sec

The TANGENTIAL velocity at 16:11 =   0. km/sec
The TOTAL velocity at 16:11 = 293. km/sec

The TANGENTIAL velocity at 16:19 =   0. km/sec
The TOTAL velocity at 16:19 = 293. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 1.08
Standard Deviation in start time measurement =   0.368E+02
Error in time =   0.94687E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.191E-01
Reduced Chi Squared = 0.889E-01
Chi Squared = 0.178E+00
The probability for exceeding chi square = 0.981E+00

The correlation coefficient =   0.992E+00
The probability that no LINEAR correlation exists between the variables =   0.7833E-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
 1988 146  14:45:49  2.00 +/- 0.10   245.0 +/-  0.5     SMM
 1988 146  15:46:44  3.40 +/- 0.25   245.0 +/-  1.0     SMM
 1988 146  16:11:30  4.00 +/- 0.10   245.0 +/-  1.0     SMM
 1988 146  16:19:45  4.50 +/- 0.10   245.0 +/-  1.0     SMM


 ****************************************
 Structure being measured:
 Top of Filled Front [Late in Event] Loor
 ****************************************


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


START TIME:


 tstart=DOY146 14:24 from derivative = 0
 Event begins at   1.92 Solar Radii
 Origin defined at DOY146 14: 0


RADIAL INFORMATION:


RADIAL ACCELERATION =  0.732E-01 +/-  0.428E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:


 c(1) =    0.203E+01 +/-   0.720E+00 [solar radii]
 c(2) =   -0.922E-02 +/-   0.202E-01 [radii/min]
 c(2) =   -0.107E+03 +/-   0.234E+03 [km/sec]
 c(3) =    0.189E-03 +/-   0.111E-03 [radii/min**2]
 c(3) =    0.732E-01 +/-   0.428E-01 [km/sec**2]


 The computed ERRORS in coefficients [BEVINGTON] are:


     Approximate error in c(1) =  0.99927E+00 [radii] Bevington pg 154 (8-30)
         Exact error in c(1) =  0.55042E+00 [radii] Bevington pg 154 (8-28)
     Approximate error in c(2) =  0.25652E-01 [radii/min] Bevington pg 154 (8-30)
         Exact error in c(2) =  0.16035E-01 [radii/min] Bevington pg 154 (8-28)
     Approximate error in c(3) =  0.13997E-03 [radii/min**] Bevington pg 154 (8-30)
         Exact error in c(3) =  0.87870E-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) = 245. +/- 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 14:45 =   0. km/sec
The TOTAL velocity at 14:45 =   94. km/sec

The TANGENTIAL velocity at 15:46 =   0. km/sec
The TOTAL velocity at 15:46 = 362. km/sec

The TANGENTIAL velocity at 16:11 =   0. km/sec
The TOTAL velocity at 16:11 = 471. km/sec

The TANGENTIAL velocity at 16:19 =   0. km/sec
The TOTAL velocity at 16:19 = 507. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 1.08
Standard Deviation in start time measurement =   0.368E+02
Value of reduced Chi Squared returned from nllst2 = 0.116E-01
Reduced Chi Squared = 0.119E+00
Chi Squared = 0.119E+00
The probability for exceeding chi square = 0.914E+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 =   0.1117E+01
The correlation between the data and the time**2 term =   0.1118E+01
0The correlation between the data and the complete equation of motion =   0.9955E+00
 SEE BEVINGTON "Data Reduction and Error Analysis" [1969]