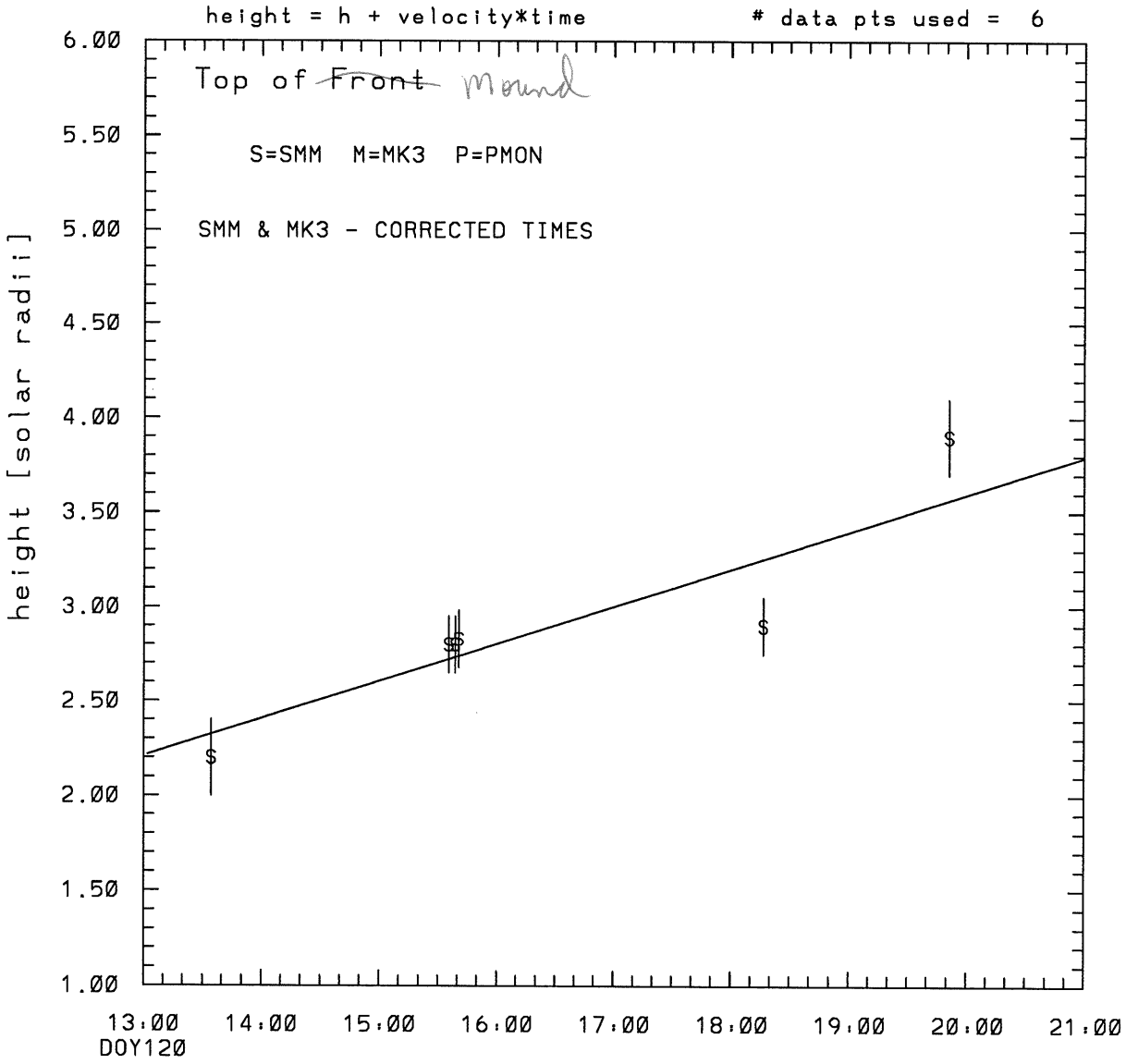
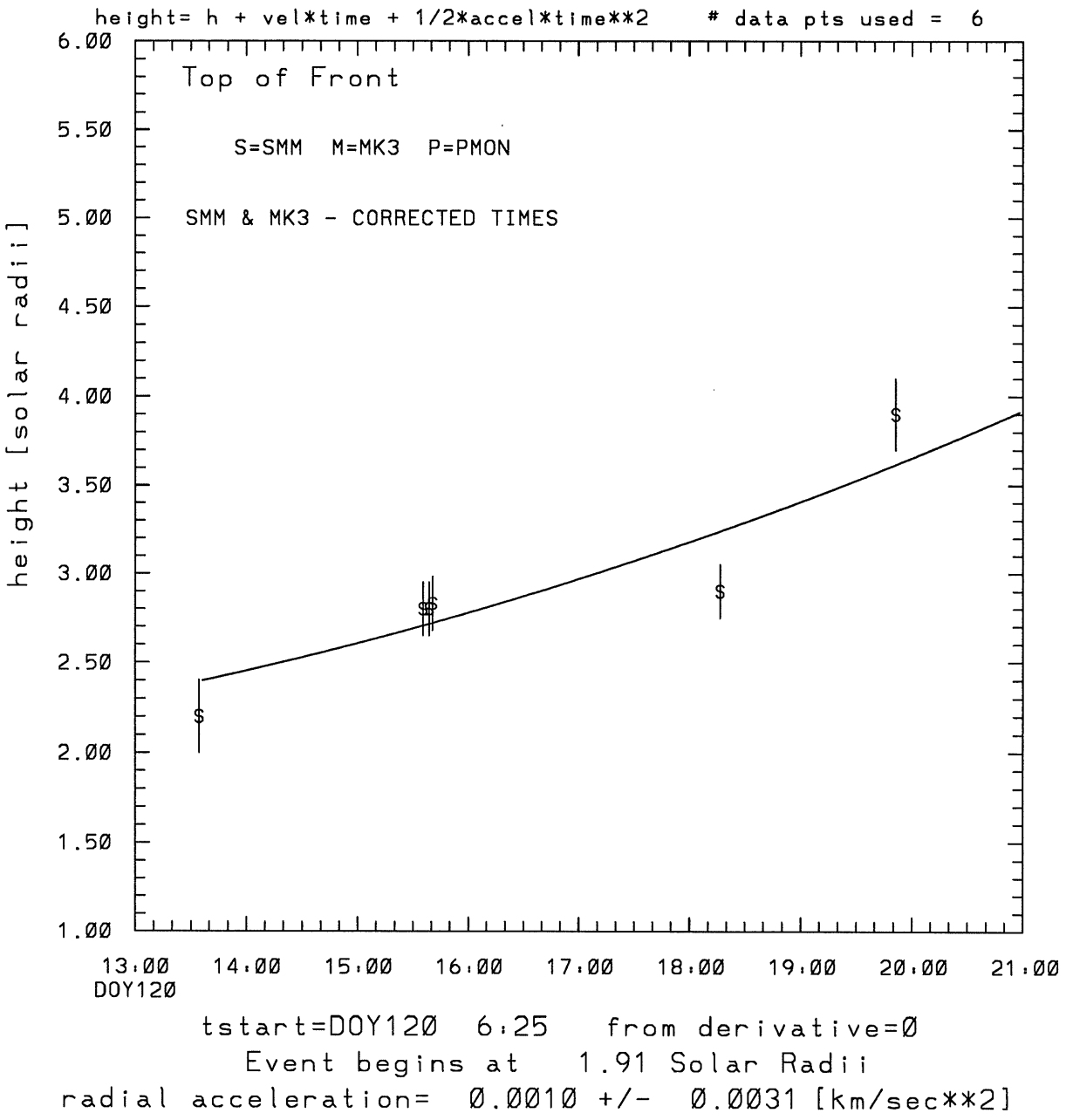
ugly!

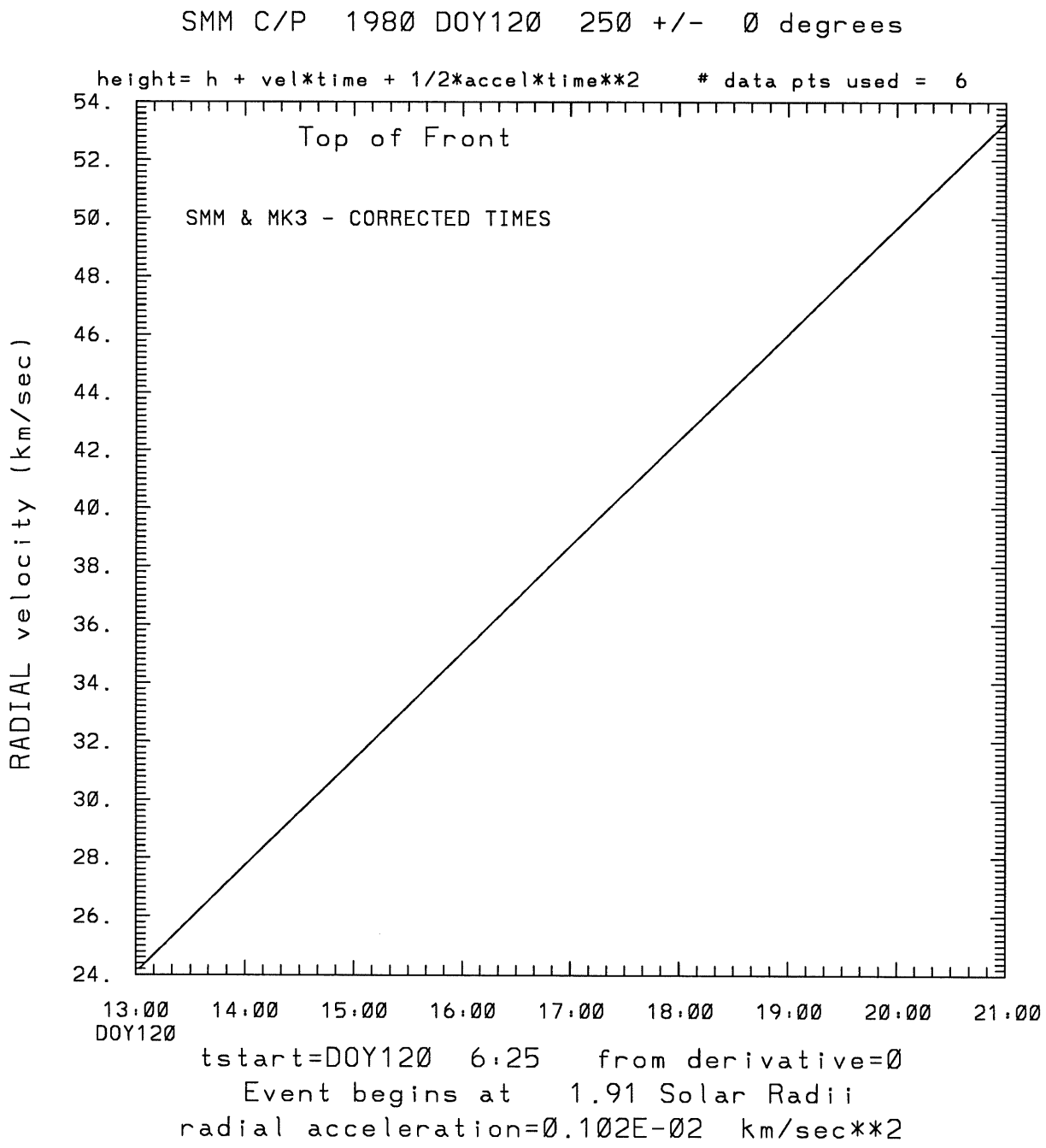
SMM C/P 1980 DOY120 250 +/- 0 degrees



tstart=DOY120 6:54 +/- 43.0 [min.]
radial velocity= 38. +/- 10. [km/sec]

This is the ughest reported trajectory of the entire mission.


SMM C/P 1980 DOY120 250 +/- 0 degrees
height= h + vel*time + 1/2*accel*time**2 # data pts used = 6
Top of Front
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
13:00
DOY120
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
tstart=DOY120 6:25 from derivative=0
Event begins at 1.91 Solar Radii
radial acceleration= 0.0010 +/- 0.0031 [km/sec**2]


SMM C/P 1980 DOY120 250 +/- 0 degrees
height= h + vel*time + 1/2*accel*time**2 # data pts used = 6
Top of Front
SMM & MK3 - CORRECTED TIMES
RADIAL velocity (km/sec)
54.
52.
50.
48.
46.
44.
42.
40.
38.
36.
34.
32.
30.
28.
26.
24.
13:00
DOY120
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
tstart=DOY120 6:25 from derivative=0
Event begins at 1.91 Solar Radii
radial acceleration=0.102E-02 km/sec**2

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

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

                                   error in          error in
year doy    time      radii   radius      angle    angle    datatype
1980 120  13:34:23   2.20 +/- 0.20     250.0 +/-  0.5        SMM
1980 120  15:35:26   2.80 +/- 0.15     250.0 +/-  0.5        SMM
1980 120  15:38:49   2.80 +/- 0.15     250.0 +/-  0.5        SMM
1980 120  15:40:38   2.83 +/- 0.15     250.0 +/-  0.5        SMM
1980 120  18:16:38   2.90 +/- 0.15     250.0 +/-  0.5        SMM
1980 120  19:51:19   3.90 +/- 0.20     250.0 +/-  1.0        SMM

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

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

START TIME:

 Event began at t = 0 + -0.366E+03 +/-  0.430E+02 [minutes]
 In more convenient units:
 Event began at DOY 120  6:54 +/-  0.430E+02 [minutes]

 Origin defined at DOY120 13: 0

RADIAL INFORMATION:

RADIAL VELOCITY =    38. +/-    10. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

 c(1) =    0.221E+01 +/-    0.196E+00 [solar radii]
 c(2) =    0.330E-02 +/-    0.852E-03 [radii/min]
 c(2) =    0.383E+02 +/-    0.988E+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)=  0.20727E+00 [radii] see Bevington pg. 114
                    error in c(2)=  0.86337E-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) = 250. +/-   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 RADIAL velocity at 13:34 =   38. km/sec

The RADIAL velocity at 15:35 =   38. km/sec
```

```
The RADIAL velocity at 15:38 =   38. km/sec

The RADIAL velocity at 15:40 =   38. km/sec

The RADIAL velocity at 18:16 =   38. km/sec

The RADIAL velocity at 19:51 =   38. km/sec


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

 Fit is ok [ier=1]

 Standard Deviation in the height =  0.55
 Standard Deviation in start time measurement =    0.123E+03
 Error in time =        0.15759E+03 using best fit method
 See Taylor Error Analysis [Univ of Colorado] pg.78

 Value of reduced Chi Squared returned from nllst2 = 0.504E-01
 Reduced Chi Squared = 0.342E+00
 Chi Squared = 0.137E+01
 The probability for exceeding chi square = 0.995E+00

 The correlation coefficient =    0.913E+00
 The probability that no LINEAR correlation exists between the variables =   0.1102
 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 120  13:34:23   2.20 +/- 0.20    250.0 +/-  0.5        SMM
1980 120  15:35:26   2.80 +/- 0.15    250.0 +/-  0.5        SMM
1980 120  15:38:49   2.80 +/- 0.15    250.0 +/-  0.5        SMM
1980 120  15:40:38   2.83 +/- 0.15    250.0 +/-  0.5        SMM
1980 120  18:16:38   2.90 +/- 0.15    250.0 +/-  0.5        SMM
1980 120  19:51:19   3.90 +/- 0.20    250.0 +/-  1.0        SMM

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

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

START TIME:

 tstart=DOY120  6:25 from derivative = 0
Event begins at   1.91 Solar Radii
 Origin defined at DOY120 13: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  0.102E-02 +/-  0.315E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

 c(1) =    0.232E+01 +/-    0.403E+00 [solar radii]
 c(2) =    0.208E-02 +/-    0.391E-02 [radii/min]
 c(2) =    0.241E+02 +/-    0.453E+02 [km/sec]
 c(3) =    0.263E-05 +/-    0.814E-05 [radii/min**2]
 c(3) =    0.102E-02 +/-    0.315E-02 [km/sec**2]

 The computed ERRORS in coefficients [BEVINGTON] are:

    Approximate error in c(1) =  0.39811E+00 [radii] Bevington pg 154 (8-30)
          Exact error in c(1) =  0.15474E+00 [radii] Bevington pg 154 (8-28)
    Approximate error in c(2) =  0.40531E-02 [radii/min] Bevington pg 154 (8-30)
          Exact error in c(2) =  0.14638E-02 [radii/min] Bevington pg 154 (8-28)
    Approximate error in c(3) =  0.84979E-05 [radii/min**2] Bevington pg 154 (8-30)
          Exact error in c(3) =  0.31110E-05 [radii/min**2] 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) = 250. +/-   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 RADIAL velocity at 13:34 =   26. km/sec
```

```
The RADIAL velocity at 15:35 =   34. km/sec

The RADIAL velocity at 15:38 =   34. km/sec

The RADIAL velocity at 15:40 =   34. km/sec

The RADIAL velocity at 18:16 =   43. km/sec

The RADIAL velocity at 19:51 =   49. km/sec


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

 Fit is ok [ier=1]

 Standard Deviation in the height =  0.55
 Standard Deviation in start time measurement =    0.123E+03
 Value of reduced Chi Squared returned from nllst2 = 0.614E-01
 Reduced Chi Squared = 0.394E+00
 Chi Squared = 0.118E+01
 The probability for exceeding chi square = 0.980E+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  =   0.7580E+00
 The correlation between the data and the time**2 term =   0.7610E+00
 The correlation between the data and the complete equation of motion=0.7564E+00
 SEE BEVINGTON "Data Reduction and Error Analysis" [1969]
```