SMM C/P 1980 DOY 85 238 +/- 0 degrees

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

Top of Tongue

    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

4:50   4:55   5:00   5: 5   5:10   5:15   5:20
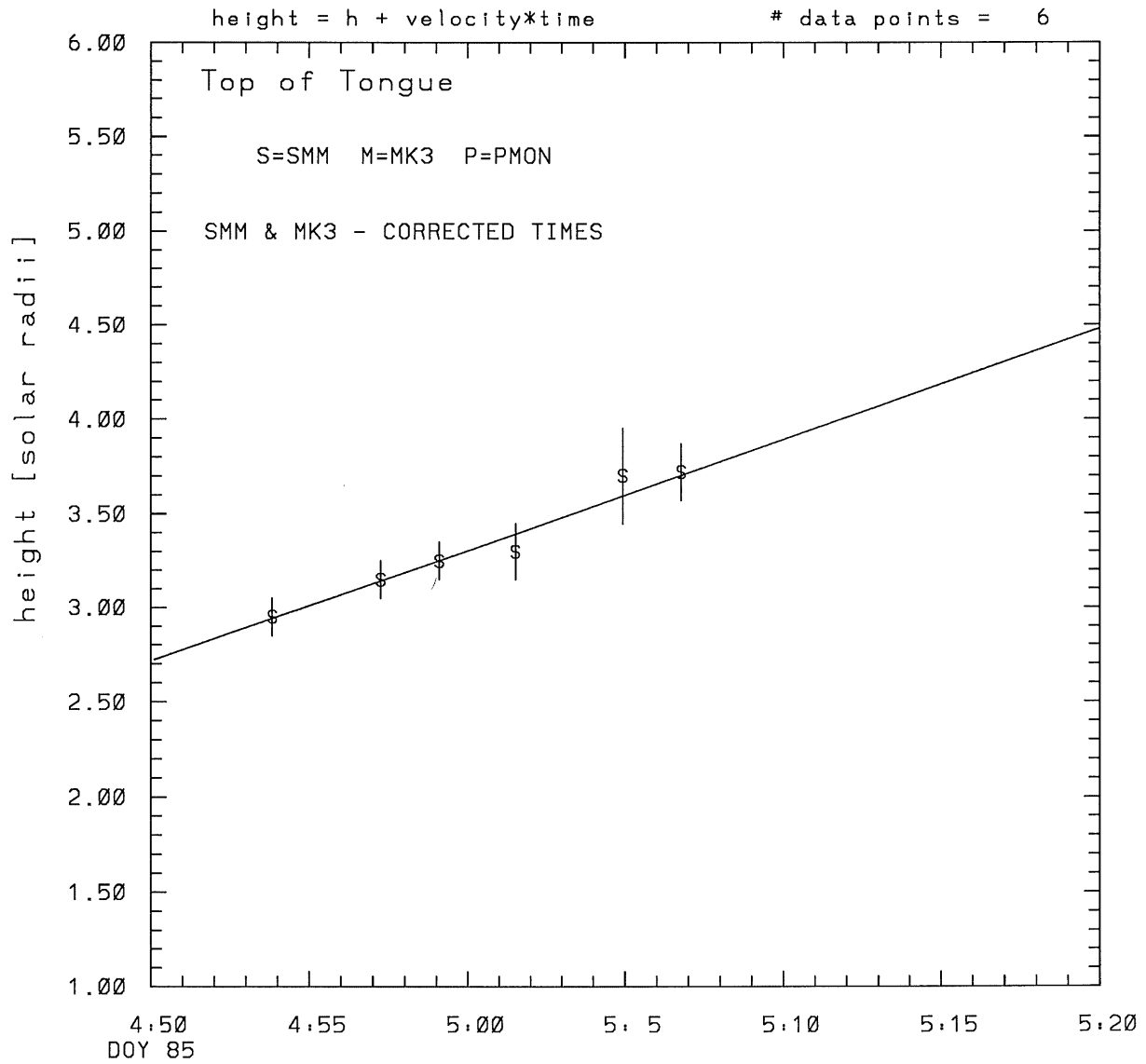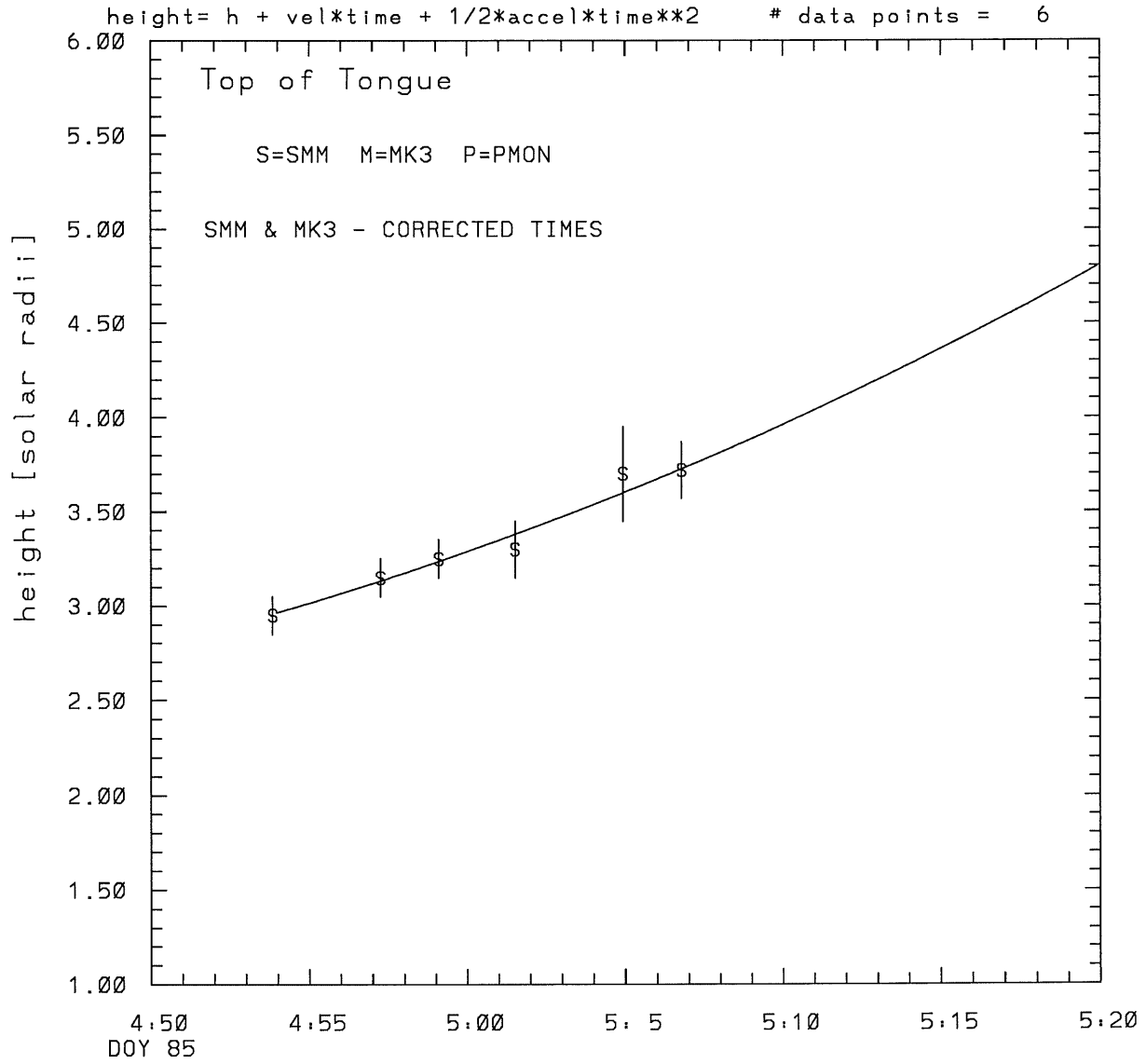DOY 85

tstart=DOY 85 4:21 +/-   0.3 [min.]
radial velocity= 682. +/- 50. [km/sec]

SMM C/P   1980 DOY 85   238 +/-   0 degrees

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

Top of Tongue

S=SMM   M=MK3   P=PMON

SMM & MK3 - CORRECTED TIMES

height [solar radii]
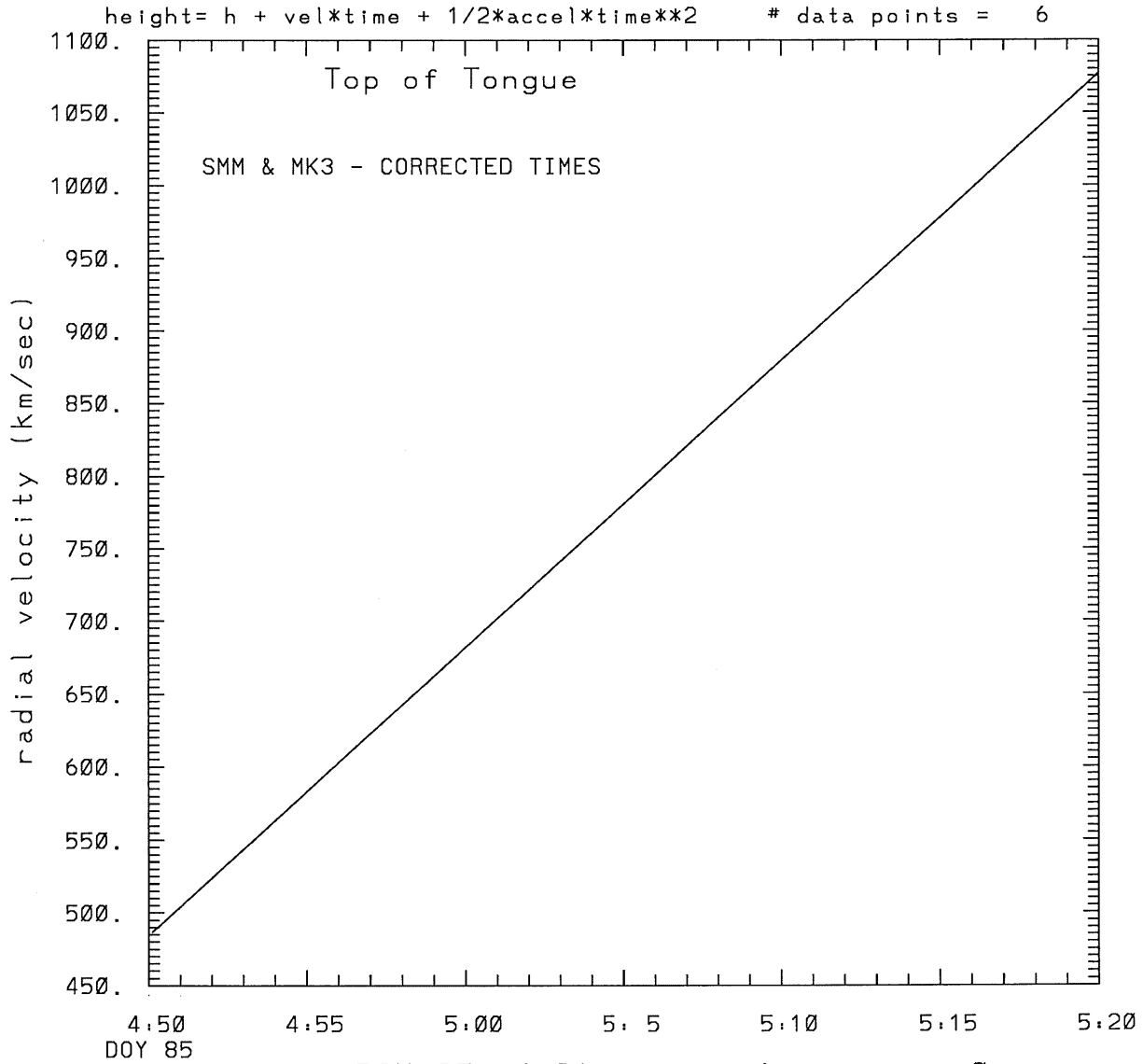
tstart=DOY 85   4:26   from derivative=0
Event begins at   2.27 Solar Radii
radial acceleration= 0.3291 +/- 0.3836 [km/sec**2]

SMM C/P 1980 DOY 85 238 +/- 0 degrees

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

Top of Tongue

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

1100.
1050.
1000.
950.
900.
850.
800.
750.
700.
650.
600.
550.
500.
450.

4:50   4:55   5:00   5: 5   5:10   5:15   5:20
DOY 85

tstart=DOY 85 4:26   from derivative=0
Event begins at   2.27 Solar Radii
radial acceleration=0.329E+00 km/sec**2

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


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


                            error in        error in
year doy    time    radii  radius    angle  angle    datatype
1980  85   4:53:50  2.95 +/- 0.10   238.0 +/-  0.5    SMM
1980  85   4:57:15  3.15 +/- 0.10   238.0 +/-  1.0    SMM
1980  85   4:59: 6  3.25 +/- 0.10   238.0 +/-  1.0    SMM
1980  85   5: 1:31  3.30 +/- 0.15   238.0 +/-  1.0    SMM
1980  85   5: 4:56  3.70 +/- 0.25   238.0 +/-  1.0    SMM
1980  85   5: 6:47  3.72 +/- 0.15   238.0 +/-  1.0    SMM


*****************************************
 Structure being measured:
Top of Tongue
*****************************************


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


START TIME:

Event began at t = 0 + -0.292E+02 +/-  0.328E+00 [minutes]
In more convenient units:
Event began at DOY  85  4:21 +/-  0.328E+00 [minutes]


Origin defined at DOY 85  4:50


RADIAL INFORMATION:


RADIAL VELOCITY =   682. +/-    50. km/sec


The computed RADIAL coefficients and errors FROM NLLST2 are:


c(1) =    0.272E+01 +/-    0.409E-01 [solar radii]
c(2) =    0.588E-01 +/-    0.428E-02 [radii/min]
c(2) =    0.682E+03 +/-    0.496E+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)= 0.75619E-01 [radii] see Bevington pg. 114
            error in c(2)= 0.66011E-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) = 238. +/-   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 4:53 = 0.000E+00 km/sec
The TOTAL velocity at 4:53 = 682. km/sec

The TANGENTIAL velocity at 4:57 = 0.000E+00 km/sec
The TOTAL velocity at 4:57 = 682. km/sec

The TANGENTIAL velocity at 4:59 = 0.000E+00 km/sec
The TOTAL velocity at 4:59 = 682. km/sec

The TANGENTIAL velocity at 5: 1 = 0.000E+00 km/sec
The TOTAL velocity at 5: 1 = 682. km/sec

The TANGENTIAL velocity at 5: 4 = 0.000E+00 km/sec
The TOTAL velocity at 5: 4 = 682. km/sec

The TANGENTIAL velocity at 5: 6 = 0.000E+00 km/sec
The TOTAL velocity at 5: 6 = 682. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.31
Standard Deviation in start time measurement =   0.442E+01
Error in time =   0.24316E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.175E-02
Reduced Chi Squared = 0.233E-01
Chi Squared = 0.933E-01
The probability for exceeding chi square = 0.100E+01

The correlation coefficient =   0.980E+00
The probability that no LINEAR correlation exists between the variables =   0.5934E-03
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  85  4:53:50  2.95 +/- 0.10  238.0 +/-  0.5    SMM
1980  85  4:57:15  3.15 +/- 0.10  238.0 +/-  1.0    SMM
1980  85  4:59: 6  3.25 +/- 0.10  238.0 +/-  1.0    SMM
1980  85  5: 1:31  3.30 +/- 0.15  238.0 +/-  1.0    SMM
1980  85  5: 4:56  3.70 +/- 0.25  238.0 +/-  1.0    SMM
1980  85  5: 6:47  3.72 +/- 0.15  238.0 +/-  1.0    SMM


******************************************
 Structure being measured:
Top of Tongue
******************************************


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


START TIME:


tstart=DOY 85  4:26 from derivative = 0
Event begins at   2.27 Solar Radii
 Origin defined at DOY 85  4:50


RADIAL INFORMATION:


RADIAL ACCELERATION =  0.329E+00 +/-  0.384E+00 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:


c(1) =    0.279E+01 +/-   0.916E-01 [solar radii]
c(2) =    0.418E-01 +/-   0.203E-01 [radii/min]
c(2) =    0.484E+03 +/-   0.235E+03 [km/sec]
c(3) =    0.851E-03 +/-   0.992E-03 [radii/min**2]
c(3) =    0.329E+00 +/-   0.384E+00 [km/sec**2]


The computed ERRORS in coefficients [BEVINGTON] are:

      Approximate error in c(1) =  0.18133E+00 [radii] Bevington pg 154 (8-30)
          Exact error in c(1) =  0.15509E-01 [radii] Bevington pg 154 (8-28)
      Approximate error in c(2) =  0.38435E-01 [radii/min] Bevington pg 154 (8-30)
          Exact error in c(2) =  0.39335E-02 [radii/min] Bevington pg 154 (8-28)
      Approximate error in c(3) =  0.18037E-02 [radii/min**]  Bevington pg 154 (8-30)
          Exact error in c(3) =  0.18425E-03 [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) = 238. +/-   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 4:53 = 0.000E+00 km/sec
The TOTAL velocity at 4:53 = 560. km/sec

The TANGENTIAL velocity at 4:57 = 0.000E+00 km/sec
The TOTAL velocity at 4:57 = 628. km/sec

The TANGENTIAL velocity at 4:59 = 0.000E+00 km/sec
The TOTAL velocity at 4:59 = 664. km/sec

The TANGENTIAL velocity at 5: 1 = 0.000E+00 km/sec
The TOTAL velocity at 5: 1 = 712. km/sec

The TANGENTIAL velocity at 5: 4 = 0.000E+00 km/sec
The TOTAL velocity at 5: 4 = 779. km/sec

The TANGENTIAL velocity at 5: 6 = 0.000E+00 km/sec
The TOTAL velocity at 5: 6 = 816. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.31
Standard Deviation in start time measurement =   0.442E+01
Value of reduced Chi Squared returned from nllst2 = 0.185E-02
Reduced Chi Squared = 0.259E-01
Chi Squared = 0.776E-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 =   0.9901E+00
The correlation between the data and the time**2 term =   0.9489E+00
The correlation between the data and the complete equation of motion =   0.9722E+00
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]