SMM C/P 1988 DOY315 74 +/- 0 degrees

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

Vertex of Inverted 'U' in Prominence _material_

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 —

6:40   6:45   6:50   6:55   7:00   7:5   7:10
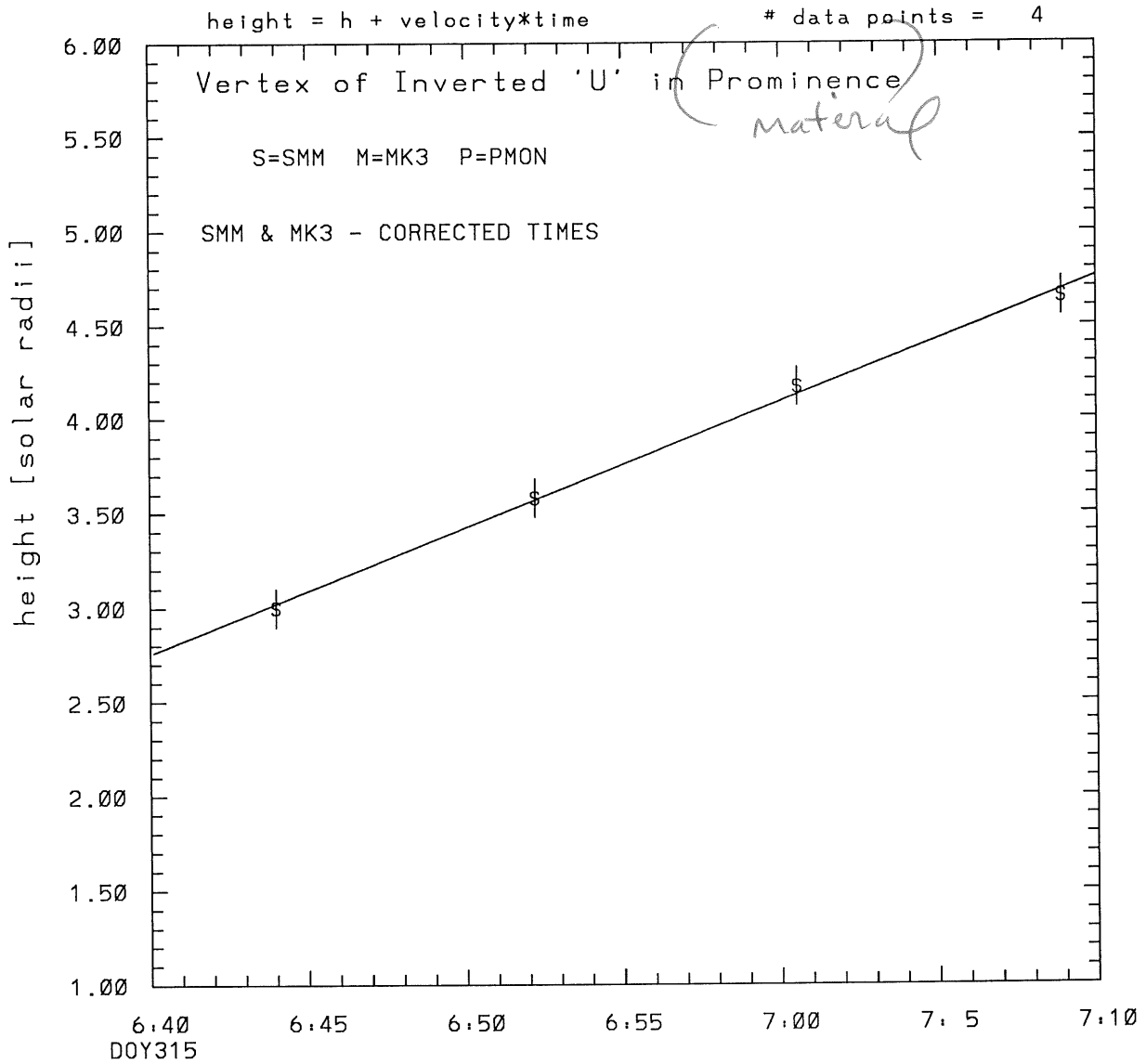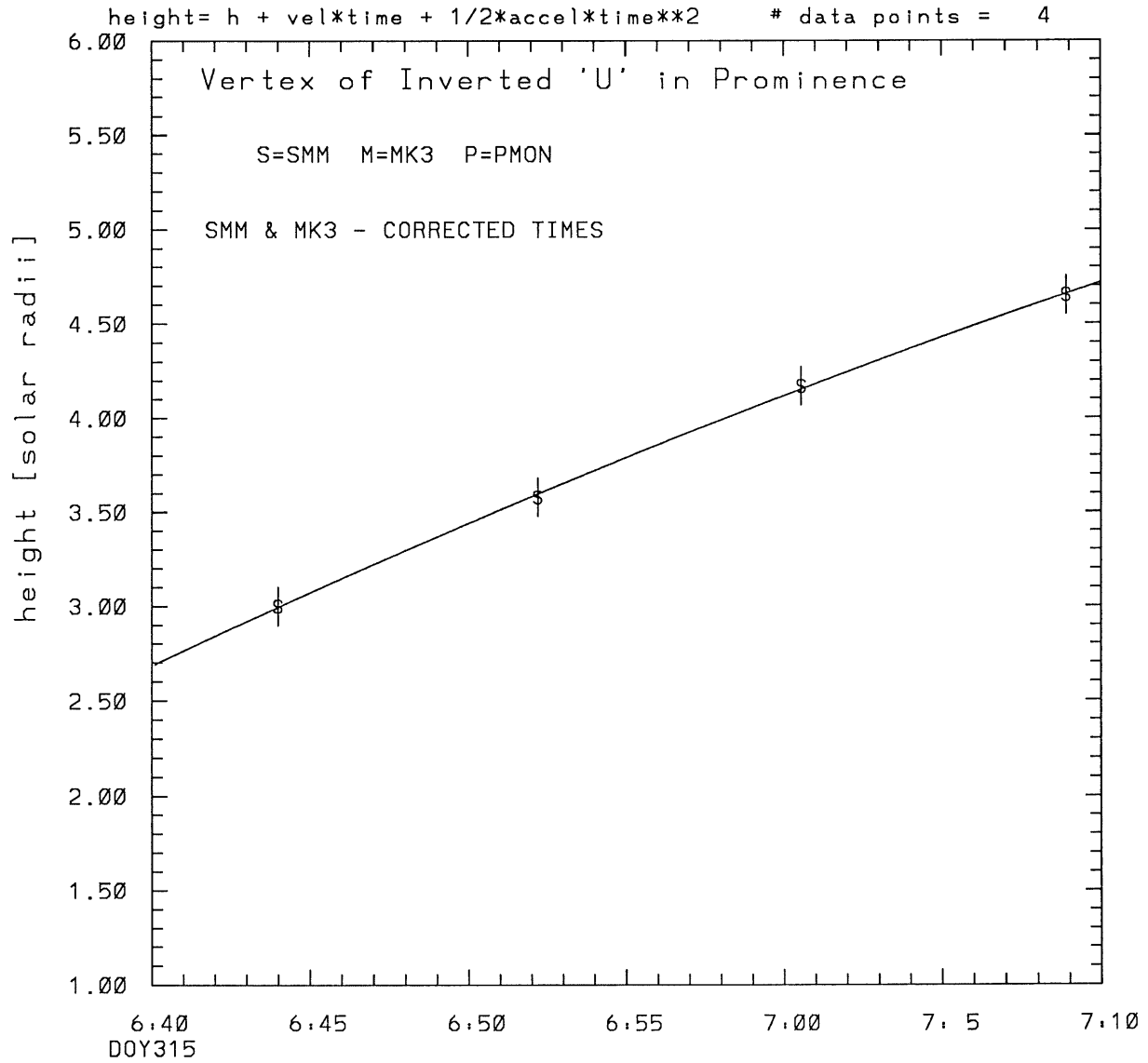DOY315

tstart=DOY315 6:14 +/-   0.4 [min.]
radial velocity= 773. +/- 22. [km/sec]

SMM C/P 1988 DOY315   74 +/- Ø degrees

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

6.00

Vertex of Inverted 'U' in Prominence

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

6:40   6:45   6:50   6:55   7:00   7:5   7:10
DOY315

tstart=DOY315 6:21 +/-   4.4 [min.]

radial acceleration=-Ø.1532 +/- Ø.0487 [km/sec**2]

SMM C/P 1988 DOY315   74 +/-   0 degrees

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

Vertex of Inverted 'U' in Prominence

SMM & MK3 - CORRECTED TIMES

radial velocity (km/sec)

940.
920.
900.
880.
860.
840.
820.
800.
780.
760.
740.
720.
700.
680.
660.
640.

6:40   6:45   6:50   6:55   7:00   7: 5   7:10
DOY315
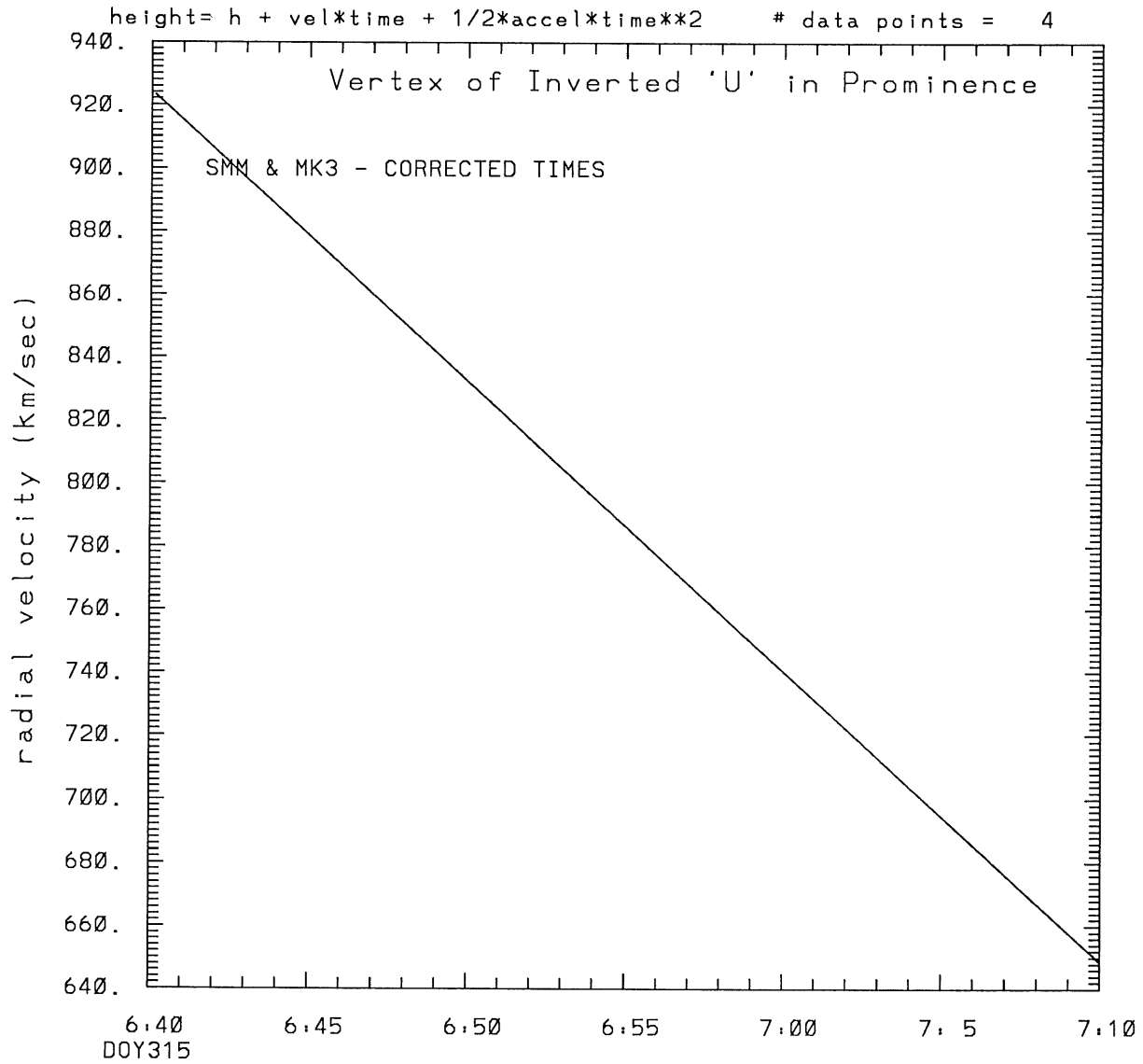
tstart=DOY315   6:21 +/-   4.4 [min.]

radial acceleration=-.153E+00 km/sec**2

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

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

year doy	time	radii	error in radius	angle	error in angle	datatype
1988 315	6:43:59	3.00	+/- 0.10	74.0	+/- 1.0	SMM
1988 315	6:52:12	3.58	+/- 0.10	74.0	+/- 1.0	SMM
1988 315	7: 0:33	4.17	+/- 0.10	74.0	+/- 1.0	SMM
1988 315	7: 8:54	4.65	+/- 0.10	74.0	+/- 1.0	SMM

```
*****************************************
 Structure being measured:
 Vertex of Inverted 'U' in Prominence
*****************************************
```

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

START TIME:

Event began at t = 0 + -0.263E+02 +/- 0.444E+00 [minutes]
In more convenient units:
Event began at DOY 315 6:14 +/- 0.444E+00 [minutes]

Origin defined at DOY315 6:40

RADIAL INFORMATION:

RADIAL VELOCITY = 773. +/- 22. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) =$ 0.276E+01 +/- 0.351E-01 [solar radii]
$c(2) =$ 0.667E-01 +/- 0.186E-02 [radii/min]
$c(2) =$ 0.773E+03 +/- 0.216E+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 $c(1)$= 0.42942E-01 [radii] see Bevington pg. 114
error in $c(2)$= 0.22773E-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) = 74. +/-   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 6:43 =   0. km/sec
The TOTAL velocity at 6:43 = 773. km/sec

The TANGENTIAL velocity at 6:52 =   0. km/sec
The TOTAL velocity at 6:52 = 773. km/sec

The TANGENTIAL velocity at 7: 0 =   0. km/sec
The TOTAL velocity at 7: 0 = 773. km/sec

The TANGENTIAL velocity at 7: 8 =   0. km/sec
The TOTAL velocity at 7: 8 = 773. km/sec

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

Fit is ok [ier=1]

Standard Deviation in the height = 0.72
Standard Deviation in start time measurement =   0.929E+01
Error in time =   0.89779E+00 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.119E-02
Reduced Chi Squared = 0.538E-02
Chi Squared = 0.108E-01
The probability for exceeding chi square = 0.999E+00

The correlation coefficient =   0.999E+00
The probability that no LINEAR correlation exists between the variables =   0.1167E-02
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

```
********************
```
This is a 2 order run
```
********************
```

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

year doy	time	radii	error in radius	angle	error in angle	datatype
1988 315	6:43:59	3.00	+/- 0.10	74.0	+/- 1.0	SMM
1988 315	6:52:12	3.58	+/- 0.10	74.0	+/- 1.0	SMM
1988 315	7: 0:33	4.17	+/- 0.10	74.0	+/- 1.0	SMM
1988 315	7: 8:54	4.65	+/- 0.10	74.0	+/- 1.0	SMM

```
******************************************
```
Structure being measured:
Vertex of Inverted 'U' in Prominence *Material*
```
******************************************
```

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

START TIME:

Event began at t = 0 + -0.193E+02 +/- 0.439E+01 [minutes]
In more convenient units:
Event began at DOY 315 6:21 +/- 0.439E+01 [minutes]

Origin defined at DOY315 6:40

RADIAL INFORMATION:

RADIAL ACCELERATION = -0.153E+00 +/- 0.487E-01 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) =$ 0.268E+01 +/-   0.291E-01 [solar radii]
$c(2) =$ 0.797E-01 +/-   0.425E-02 [radii/min]
$c(2) =$ 0.924E+03 +/-   0.493E+02 [km/sec]
$c(3) =$ -0.396E-03 +/-   0.126E-03 [radii/min**2]
$c(3) =$ -0.153E+00 +/-   0.487E-01 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in $c(1) =$ 0.41208E-01 [radii] Bevington pg 154 (8-30)
Exact error in $c(1) =$ 0.13182E-01 [radii] Bevington pg 154 (8-28)
Approximate error in $c(2) =$ 0.60087E-02 [radii/min] Bevington pg 154 (8-30)
. Exact error in $c(2) =$ 0.29484E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in $c(3) =$ 0.17819E-03 [radii/min**] Bevington pg 154 (8-30)
Exact error in $c(3) =$ 0.89088E-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) = 74. +/- 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 6:43 = 0. km/sec
The TOTAL velocity at 6:43 = 888. km/sec

The TANGENTIAL velocity at 6:52 = 0. km/sec
The TOTAL velocity at 6:52 = 812. km/sec

The TANGENTIAL velocity at 7: 0 = 0. km/sec
The TOTAL velocity at 7: 0 = 736. km/sec

The TANGENTIAL velocity at 7: 8 = 0. km/sec
The TOTAL velocity at 7: 8 = 659. km/sec


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

Fit is ok [ier=1]

Standard Deviation in the height = 0.72
Standard Deviation in start time measurement = 0.929E+01
Value of reduced Chi Squared returned from nllst2 = 0.301E-03
Reduced Chi Squared = 0.150E-02
Chi Squared = 0.150E-02
The probability for exceeding chi square = 0.986E+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 = 0.9988E+00
The correlation between the data and the time**2 term = 0.9647E+00
0The correlation between the data and the complete equation of motion = 0.9996E+00
 SEE BEVINGTON "Data Reduction and Error Analysis" [1969]