

7
HG
11366
v. 640

Photographic Record.

A² 172
From 1872, Aug. 1 to 1873, Jan. 1

Sever, Francis & Co., University Booksellers, Cambridge.

27

$$\begin{array}{r} 39 \quad 31 \\ 37 \quad 54 \\ \hline 137 \end{array}$$

$$\begin{array}{r} 46 \quad 38 \\ -10 \quad 18 \\ \hline \end{array}$$

$$\begin{array}{r} -26 \quad 28 \end{array}$$

Aug 1 1872

48 R. des. Linn

King Zone & P.C.

1 A m ve. *Pleuro* M. gr 1311

a. pinguis 13 18

n. us. *Mig* 13 42. *all. m.*

n. *Protes* 1348 *m. gr.*

B. *Protes* 14 56 *Septu arum*

B. *Lilume* 1509

S. *Ophurchi* 16 7 38 - 3 24

F. *Herculis* 16 15 42 + 46 38

A. *Geopet* 16 21 12 - 26 8

~~n. *Draeco* 16 20 24 11 2~~

A. *Draeco* 16 28 20 + 69 03

G. *Ophurchi* 16 29 46 - 10 18

1872 Aug. 1.

K Ophiuchi 16 51 36 + 9 34

d Hercules 16 56 39 + 33 46

E Ursa Min. 16 59 16 + 82 15

a Hercules 17 8 46 + 14 32

u Hercules 17 41 25 + 27 48

✓ Ursa Min 18 11

a Lyrae 18 32

51 Cassio 18 37

B Lyrae 18 45

o Sagittari 18 47

sv Draco 18 50

g Aquarii 18 59

d Sagittari 19 10

✓ Draconis

TP 200 1515 + 7306

(Sy. 1919 + 251
cont-a₂ rattle)

a Symin 1944

B Sy. 1848
P us m 1953

no 2 = 572

3 573

4 574

Aug 2 1872

5 Scorpion

5 Opus.

Clouds.

Nov-57 5

Aug 4 1872

W.R. Dr. Tinsley

Polaris lost in 3rd too soon
at Tinsley 13 18

a Bortle 14 09

B Bortle 14 56

B Libra 15 09

~~U. Bortle 15 19~~

~~a Cor Ber~~

a Serpens 15 37 mid in fall

n Deneb 16 22

Falsch. at 16 28

30th 16 29

n Hercules 16 38 30 + 39, 10

x Ophiuchi 16 51

d Glorialis 16 56 40 + 33 45

1872 Aug. 4

E Urs. Maj. 16 59 16 + 82 15

Gr. 966 17 22 29 + 105 03

B Draco. 17 27 24 + 52 24

U Hercules 17 41 25 + 27 48

W.R. Mrs P.G.

and Linn Stur

Leiny Bod.

J.F. M records

no 1 = 576

2 = 577

Aug 5 1872

WASP. P. b. zone
and stars etc

J F M v. 10

a. Scipii 16 21 Extinction

n. D. v. 16 22

A. Draco. 16 28 20 + 69. 13

η Hercules 16 38 30 + 39 10

κ Ophiuchi 16 51 36 + 9 34

δ Hercules 16 56 40 + 33 45

ϵ U. v. min 16 59 16 + 82 15

α' Hercules 17 8 33 + 14 33

μ Hercules 17 41 25 + 27 48

ν Draco. 17 44 14 + 72 13

γ Draco. 17 53 36 + 51. 30

ζ Sagittae 17 57 12 - 30 25

ν Hercules 18 05 n. y. 5-11

J. M. Min 18 12

Extinction = 578

Aug 6 1872

Palais. lost ones 1 & 4

n no my 13 42

n no my 13 45

a Hifus 13 18

~~a no my 14 09~~

X n Hercules 16 38 30 + 39 10

K Ophiuchi 16 57 36 + 9 34

d Hercules 16 56 40 + 33 46

E Uro. Min 16 59 16 + 82 15

a Hercules 17 8 33 + 14 33

b Ophiuchi 17 18 12 - 24 3

B Draco, 17 27 25 + 52 24

u 17 41 25 + 27 48

y Draco, 17 44 14 + 72 13

2 Draco 17 53 45 + 57 30

m H Records.

from him

Urs Min 1412

~~1 April~~

X a. Lyrae 1839
B. Lyrae 1837

o Sagittum 1847

o Draco 1850

3 Aquila 1859

d Sagittum 1909

~~o Draco 1912~~

1 Draco 1918

o Aquila 1919

B. Aquila 1948

Urs Min lost - 1st win

a 2 Capricorn 2010

X Aquila 2019

E. Draconis 2026

Urs Min 2036

29
15
10
5
1
2
3

Aug 7 1872
 J. W. L. L. L.

Polaris

La Virginis lost 3 w.

For these two stars. a was set
 at 643. 553 - instead of 644

Set C at 43. 644

2 hrs May 18 42 16 + 49 59

n Bootis 13 48 18 + 19 4

a Bootis 14 09 33 + 19 52

E Bootis 14 39 8 + 27 38

a Lib 14 43 28 - 15 29

n Hercules 16 38 30 + 39 10

K Ophiuchi 16 51 36 + 9 34

d Hercules 16 56 40 + 33 46

1872, Aug. 27.

ϵ Ursa Min. 16 59 16 + 82 15

α Hercules 17 08 46 + 14 32

β Ophiuchi 17 18 12 - 244

β Draco. 17 27 25 + 52 24

ψ Draco. 17 44 14 + 72 13

γ Draco 17 53 31 + 51 30

γ_2 Sagitt. 17 57 12 - 30 25

μ Sagitt. 18 5 45 - 21 5

δ Ursa Min. 18 14 00 + 86 36

α Lyrae 18 32 24 + 38 40

β Lyrae 18 45 20 + 33 13

δ Sagitt. 18 46 58 - 26 28

δ Draco. 18 50 31 + 75 17

~~α Aquarii W.A.R. (2111)~~

~~γ Aquarii 19 39 53 + 10 17~~

Druf 7th

K Aquileus

γ Aquilae

δ Aquilae

β Aquilae

λ Ursinae 2

γ Aquilae

α² Capricorni

K Capricorn 2

Sum

W 53.0

53.0

53.0

E 31.0

31.0

31.0

W 42.0

42.0

42.0

E 42.0

42.0

42.0

55.5

28.0

55.5

28.0

55.5

28.0

36.0

48.0

36.0

48.0

36.0

48.0

54.25

29.50

39.0

45.0

93.25

74.50

 $18.75 = +4.69$ $W1 = 582$ $2 = 583$ $3 = 584$ $4 = 585$ $5 = 586$

1872, Aug. 8.

E Urs. Min. 16 59 16 + 82 15
 a Herculis 17 8 46 + 14 32
 b Ophiuchi 17 18 12 - 24 3
 B Draco. 17 27 35 + 52 24
 a Ophiuchi 17 28 48 + 12 40
 u Herculis. 17 41 25 + 27 48
 ψ Draco. 17 44 14 + 72 13
 γ Draco. 17 53 37 + 51 30
 u Sagittarii. 18 5 45 - 21 5
 a Lyrae 18 32 36 + 38 40
 (51 Cephei 18 39 + 92 45)
 (last 4 wires)
 B Lyrae 18 45 20 + 33 13
 o Sagittarii 18 46 58 - 26 28
 50 Draco. 18 50 31 + 75 17
 20th Dr. P. b. & Lins. stars
 No. = 587

Aug 9 1872

Mr R. D. S. Linn. class

Palans 13 12

a Triguins 13 14

n us May 13 42

n Bortis 13 45

a Bortis 14 09

g Bortis 14 20

e Bortis 14 39

B Libanus 15 04

a Scorpion 15 29

E Scorpion 15 44

B Scorpion 16 57 lost - Mars w.

T Mercuris 16 15

a Scorpion 16 21

n Doves 16 22

not 58
27589

1872, Aug 10.

3	Herculis	16	38	48	+39	10
K	Ophiuchi	16	51	36	+9	34
d	Herculis	16	56	40	+33	46
E	Urs. Min.	16	59	16	+82	15
a	Herculis	17	8	46	+14	32
b	Ophiuchi	17	18	11	-24	3
(false observation of six strokes per sec)						
B	Draco.	17	27	35	+52	24
a	Ophiuchi	17	28	41	+12	40
u	Herculis	17	41	25	+27	48
y	Draco.	17	44	14	+72	13
γ	Draco.	17	53	37	+51	30
u	Sagittarii	18	5	45	-21	5
1	Aquilae	18	27	55	-8	20
a	Lyræ	18	32	24	+38	40
B	Lyræ	18	45	20	+33	13
o	Sagittarii	18	46	58	-26	28
(lost some of the first Wires)						

1872-1873
m. 2-2-1873
m. 1-1-1873

Aug 14 1872

Work out the diaphy
and cleared it

Adjusted carefully

Aug 12

Value of one div's
ion of horizontal from
the circle. Spoc moved
over = 10"
over

Aug 12 1872

N. S. Diff. Vol. idm

127	60.0	#	"
5.5	46.8	12.95	79
36.6	35.6	11.20	89
48.0	24.0	11.50	87
8.4	63.2		
22.0	49.3	13.75	73
35.7	36.2	13.10	76
45.0	25.8	10.15	94
55.0	16.1	9.85	102
66.1	5.1	11.05	90
54.9	16.2	11.25	89
46.5	25.0	8.50	118
34.9	36.2	11.40	88
23.7	47.6	11.30	89
12.0	59.0	11.55	85

Mean = 88"

Mean = 83.2

Value from level
 tier previously found
 $= .80$

The value to be used
 tie further note $= .84$

Aug 14

W.R. Das Lin stars

a Androm ^h 0 ^m 2

2 Reg. 0 7

W = 52

a Cass. v 3-3

Palais 1 12

2 Porti 1 17

2 P's Cu 1 24

See end.

Sept. 1896

No. 1 = 593

Sent the Lumin Clocks
to Bond and Lums to
be cleaned.

Sept. 9/17 2
 Chron 3451
 Put up a diaphragm
 for observing perovskite
 Aggregates.
 From

||||| ||||| ||||| ||||| |||||

J. H. R. Des.

J. Aguilar? 1939

a. Aug. loc 9 1944

x Des. loc 45-6 1952

2 Aug 1957

π Cap 20 19

2 Dec. 20 26 (19 m)

a legy 20 37 + 44 49 (9^{1/2})
 u sy 20 45 - (19 w)
 61, legy 21 01 (9 w)
 3 legy 21 07 9(w)
 a capm 21 15 (19 w)
 B sy 21 25 (19 w)
 B capm 21 26 4.5 (9 w) 12
 4 sy 21 30 (1920)? hany.
 2 sy 21 38 (19 w)
 11 capm 21 40 (9 w)
 u capm 21 46 (19 w)

a Sy 2159 4.1 (920) 12
1.1 22

No 1 = 594

2 = 595

List-selected for personal Equa
tion Observations

$$1845^{h m s} 19 + 33^{\circ} 13'$$

$$184716 - 2627$$

$$185029 + 7517$$

$$185931 + 1341$$

$$190255 + 3555$$

$$19109 - 1911$$

$$191231 + 6726$$

$$191800 + 7307$$

$$192534 + 2741$$

$$193000 - 719$$

$$193310 + 4916$$

$$194010 + 1018$$

$$19\ 44\ 32 + 8\ 32$$

$$19\ 48\ 36 + 69\ 56$$

$$19\ 57\ 53 + 6\ 55?$$

$$20\ 04\ 40 - 1\ 12$$

$$20\ 13\ 11 + 77\ 19$$

$$20\ 17\ 36 + 39\ 58$$

$$20\ 20\ 00 - 18\ 38$$

$$20\ 27\ 06 + 10\ 52$$

$$20\ 30\ 53 + 72\ 06$$

$$20\ 37\ 19 + 44\ 49$$

$$20\ 41\ 12 + 33\ 29$$

$$20\ 53\ 19 + 40\ 04$$

$$21\ 01\ 10 + 38\ 07$$

$$21\ 07\ 29 + 29\ 42$$

$$21 \overset{9}{9} \overset{2}{9} \overset{5}{42} + \overset{0}{37} \overset{1}{30}$$

$$21.15.31 + 62.03$$

$$21.18.29 + 98.06$$

$$21.24.06 - 6.08$$

$$21.26.59 + 76.00$$

$$21.30.56 - 82.6$$

$$21.37.53 + 9.17$$

$$21.40.02 + 709.3$$

$$21.46.18 - 14.09$$

$$21.51.16 + 730.6$$

$$21.59.12 - 0.57$$

$$22.03.45 + 53.4$$

$$22.6.21 + 54.34$$

22 10 04 - 825

22 15 02 - 202

22 18 44 + 0 44

22 24 05 + 103 37

22 31 00 + 75 33

22 35 04 + 10 10

22 38 20 + 41 09

22 45 07 + 65 31

22 56 04 + 41 38

22 58 24 + 14 31

23 10 32 + 2 35

23 13 23 + 67 25

23 19 02 + 22 42

23 23 43 - 109 56

23 31 17 + 45 45

23 34 00 + 76 55

Sept 10 1872

W. H. R. and Wm. H. R.
 mess. ds. for personal Ejection
 W. H. R. ds. the 9 middle down
 mess. Wm. H. ds. the fine king
 outside tables.

Oh 3451

Put in special diaphragm
 for personal 9596
 not 596

18 59 31 + 13 41

19 02 55 + 35 55

19 10 9 - 19 11

19 12 31 + 67 20

19 18 00 + 73 81

19 25 34 + 27 41

Use only last two wires of last set

19 30 00 - 7 19

19 33 10 + 49 56 ?

19 40 10 + 10 18

19 44 32 + 8 32

19 48 36 + 69 56

20 04 40 - 1 12

20 13 11 + 77 19

20 17 36 + 39 51

20 20 00 - 18 38

20 27 06 + 10 52

20 30 53 + 72 06

1872 Sept. 12

W R W

Observed

Small

no 2 = 597

Ch 3457

Sept. 12

18	59	31	+	13	41
19	02	55	+	35	55
19	10	9	-	19	11 last tally dbt.
19	18	00	+	73	07 ch. 2
19	25	34	+	27	41 ch. ?
19	30	00	-	7	19
19	33	10	+	49	56
19	40	10	+	10	18
19	44	32	+	8	32
19	48	36	+	69	56
19	57	53	+	6	5.5
20	04	40	-	1	12
20	13	11	+	77	19
20	17	36	+	39	51
20	20	00	-	18	38
20	27	06	+	10	52
20	30	13	+	72	06
20	37	19	+	44	49
20	41	12	+	33	29
20	53	19	+	80	04

Sunt Clock.
Sept. 18 1892

W. R. Oles. Jr. =
personal equation
by reading shepher
20 h 15^m

not 259
2 = 598

20 17 36 + 39 51 (19 Wires)

20 20 00 - 18 38 (19 W)

20 30 13 + 72 06 (19 W)

20 41 12 + 33 29 (19 W)

20 53 19 + 80 04 (19 W)

21 01 10 + 38 07 (19 W)

21 7 29 + 29 42 (19 W)

{ lost 1st W. of sec. set Clouds

21 9 42 + 37 30 (19 W)

~~21 15 31 + 62 03~~

Reg'd Col - too dark,
imperfect on acct. of clouds.

Sept, 19, 1872

W. R. W. R.

Observed for several

Eruptions.

19	33	10	+	49	59
19	40	10	+	10	18
19	44	32	+	8	32

Focus pretty bad for 3 pr. stars

Added 1 ~~to~~ of photos to

South Celestial for rate given
above observations

Thunder Storm

W.H.R. No 76 observed

again. Seeing not
clear

Pulse Obs in

in Aquarius 22 28

10 Lacertae 22 32

Sept 19 1872

B Pegasi 22 35 ^h failure

n Peg. 22 36 " "

r Peg. 22 41

u Peg. 22 44

r Aquarii 22 46 Ch. 2

v Androm 22 56 (lost a sample)

a Peg. 22 58

Br. 3177 23 07

r Piscis 23 10

23 13 + 67 25

23 19 + 22 42

23 23 + 109 56

72 Pegasi 2329 +30 37

7 Androm 23 31 45-46

7 Corvi. 23 3 9

Sept. 19 Morning

in Rds.

7 Gemini 6 30 46 31

Nov = 155

2 = 602

1872 Sept. 2
 19^h 46^m 4^m Obs

20^h 4^m 40^s - 10 12^s four last on gr

20 13 11 + 77 19

20 17 36 + 39 51

20 27 6 + 100 52^s

20 30 53 + 72^s 06^s

2^h Delphi

20^h 37^m 14^s + 44^s 49^s

20 41 12 + 330 24^s

32 Vulpeculae

20 53 19 + 800 04^s

~~21 1 10 + 38 07~~ too late for it

21 7 29 + 29 42

21 4 42 + 37 30

21^h 12^m

19 40 10 + 10 18

19 44 32 + 8 32

Revised Chronogram sheet -

Sept. 23

W. R. des. P. L.

Leaving bird

W01 = 600

2 = 607

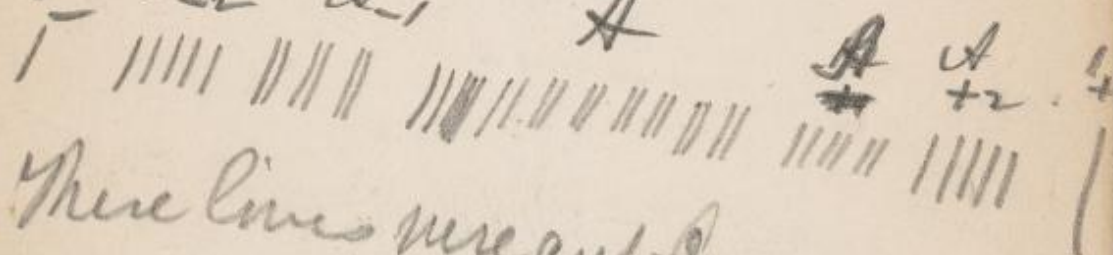
Sept. 25 1882

Took out the personnel

Experiment Diaphragm

Put in a new diaphragm

measured, thus



These lines were cut by a scum

Made by Beyer Beyer

The following ^{micrometric} measurements were

Made with a scum by Clark

The results are the mean of 3 readings

~~over~~

1+ =

Rev. dir.
52 87.3

A _{1/2}	1 =	54	39.0
	2 =	52	79.2
	3 =	56	19.8
	4 =	55	59.7
	5 =	56	0.3

A ₁	1 =	56	82.7
	2 =	57	23.4
	3 =	57	63.4

A	1 =	58	44.4 -
	2 =	58	64.4
	3 =	58	84.6 -
	4 =	59	5.1
	5 =	59	25.3 -
	6 =	59	45.4
	7 =	59	65.4 -
	8 =	59	85.4
	9 =	60	6.1 -

A ₋₁	1 =	60	86.7
	2 =	61	27.2
	3 =	61	67.5

A	$1 =$	62	50.1
-2	$2 =$	62	90.1
	$3 =$	63	30.8
	$4 =$	63	70.8
	$5 =$	64	11.7

$$! = 66, 13.8$$

$$\text{Mean of } A = 25.16 = 9 \text{ wires}$$

$$\text{Mean of } A_+ \text{ and } A_- = 25.15 = 6 \text{ wires}$$

$$\text{Mean of } A_+ \text{ and } A_- = 25.12 = 19 \text{ wires}$$

$$\text{Mean of } A_+ \text{ and } A_- = 25.15 = 10 \text{ wires}$$

$$\text{Mean of 5 wires of } A = 25.16 = 5 \text{ wires}$$

Adopting 25.15, and assuming the middle wire to be correctly measured we have for the reduction to the middle wire $25.30 - 25.15 = 0.15$ Since $1 \text{ dia} = .05$, the reduction in time = $.0075$. It may be safely assumed =

γ and $\perp$ are ^{to be} used for setting
 for δ at equal distances
 from the middle wire
 δ and $\perp$ are for personal
 equation between single and
 double wires. Also for observing
 very faint stars, the
 single wires being rather better
 adapted for this purpose

The nine wires of δ are
 are used for pole stars

5 wires of δ are to be used
 for stars ordinarily

α_1 , α_2 , and 5 wires of α_1
are to be used for stars
below 50°

Sept. 28 1882

NR Dr. Pb.

NR veds from 19^h 14^m

to 19 35 incl.

I.T.M. veds. from 19 35

NR veds from 22 07

Dr H R Dr. zone
from 21^h 29^m to 22^h 30^m

Seeing many birds

Net = 602

2 = 603

Sept 30/1872
W. V. R. Dr.
Ginn stars.

Oct 2 1872

Adjusted illuminations
 took out eye ^{and telescope} ~~piece~~ . Put
 back and adj'nted
 perpendicularity of mis
 Cangel.

W.R. Ds. Rb.
 W.R. vods. from 1814
 till 19th 3rd

J.F. m vods from 1940th

W.R. Ds. 2000
 W.R. dy Rb.

Selling tolerable

No 1 = 604

2 = 605

3 = 606

Oct 31 1872

W. R. Des. B. L.

W. R. Des. none
from 2042 to 2112

J. F. M. Deeds

Nov - 1872

Oct 9/172

24 Rds. P. b.

WR reads for 18^{km} 14

till 1952

(S.M. Ds. a bypin)

F.P.M reads for 204

WR Ds. unter

Rücken Gänst

Rejohseestung

no1=608

MR. Jas. W. R. Rains

~~E. D. R. 2026~~

73 Draco.	20	33	53	14
4) a Cygni	20	37	327	52 (9)
6 Her. Ceph.	20	42	357	35 (11)
5) a Aquarii	20	45	345	14 (17)
4) Cygni	20	52	51	52
4) Cygni	20	52	1	44

15.1
14.3
↓ E

W

Level at 2

h. m. W

15.1	15.7	15.0	15.0
14.3	14.3	14.7	14.7
12.2	12.4	12.2	12.2
12.2	12.2	12.3	12.3

61 Cygni, 21 1
140 2 4 17

Oct. 10

1872phae.proj.1644R

Star.	Time	Setting	Wise
-------	------	---------	------

MR. Ls. B.
W.R. recd.

Nov = 609
2 = 6110

001-121832

MR Os. ^(D) Gb.

MR reads time 20 30

Key Os of 2 hrs Min

I F M reads fr 20 30

MR Os, zone

MR Os P. G.

MR Os, with R7.

No 1 = 611

2 = 612

3 = 613

Obs with ~~0030 R~~ D.

Star time setting Wires

1781 Ushim. 22 23 316 55 9

n dy 22 28 43 11 19

3 Reg 22 34 32 15 19

Wn Reg 22 40 19 30 19

0030 R, 22 41 336

a Piscis Aut 22 50 72 42

Level

152 196 1658

151 197 1832

180 170 174

170 170 +.87

170 170

263 333

Remind

0 20

2 Pic 23 10 320 12

0 Ceph 23 13-25-02

0 Pic 23 21 323 16

E W

158 195

190 160

192 160

168 183

308 698

17.70 / 1745

2525
-12

~~6 Pic 23 33 322 31~~

2 b a/m 23 33

4 Reg 23 45 336 10

0 Pic 23 52 323 45

161 E W
192

190 161

355 353

1755 1765

-05

Oct 14 1872
 W.R. on P.B.
 W.R. reads all

W.R. & A.M. on
 min in Cicero R.T.
 W.R. & A.M. R.T. long stick
 all obs with M.C. on stick

61 Cyg. W.R.
 3 Bign. W.A.R. & A.M.
 a Cephei W.A.R. & A.M.
 1 ~~Draco~~ A.M.
 B Cephei A.M. & W.A.R.

1872 Oct. 14

{ Aquarii. A. M.
{ Pegasi. W. A. R. & A. M.
{ WSR ist min lost gr.?

(11 Cephei A. M. & W. A. R.)
WSR obs mid gr.

W. A. R. obs with W. L.
& M. obs. with R. T.

11, Capricorni W. A. R. &

79 Draco. W. A. R.

(a Aquarii W. A. R. & A. M.)
(A. M. lost 1st 2. wires of 1st gr.)

(Pegasi W. A. R. & A. M.)

(+ Pegasi W. A. R. & A. M.)
(false sk. of the WSR)

+ Aquarii W. A. R.

+ Aquarii W. A. R. & A. M.

11 Aquarii W. A. R. A. M.

1872 Oct. 14

9 Draco. W.A.R.

226 Cephei. W.A.R. + A.M.

Revised R.T.

3 Peg. W.A.R.

i Eri. W.A.R. A.M.

a Pegasi W.A.R. + A.M.

γ Piscium A.M. & W.A.R.

o Cephei A.M. & W.A.R.

A.M. Obs. with M.C.

W.A.R. with R.T.

~~Pegasi W.A.R. + A.M.~~
 (A.M. indt foll. M.C. Obs.)

~~Piscium W.A.R. & A.M.~~
~~1 Draco W.A.R. A.M.~~

W.A.R. Obs. last Wires

2 Androm W.A.R. + A.M.

1872 Oct. 14.

5 Piscium N.A.R. + A.M.
4 Peg A.M.

44163 Paerl Dr.

altitude NAR 18 W

4 Procy NAR 18 W

+ Procy NAR 19

32 Cos NAR (lat 2) 8 W

NAR obs. Palais

with R.T. = ins 45 - m.p. - 1.2

with M.B. at 41. 45 W

3 strokes for mid wire with R.T.

one long stroke for M.B.

201 = 614

2 = 615

3 = 616

4 = 617

1872 Oct. 15

A. M. M. C.
W. A. R. R. P. C. E.

61 Cygni. A. M.

(3 Cygni A. M. + W. A. R.)

(2 false breaks after 1st set. W. A. R.)

a Cephei. W. A. R. + A. M.

12 Draco. A. M.

d Urs. Maj. W. A. R. + A. M.

B Cephei. A. M. W. A. R.

(E Pegasi. W. A. R. + A. M.)

W. A. R. false break after

1st setA. M. lost 1st A. rej A-1

u Capricorni W. A. R. + A. M.

W. A. R. Obs. P. Hazy

(79 Draco. W. A. R.)

A 4.5, 6

4.0, 6
A. M. R. J

W. A. R. M. C.

a Aquarii W. A. R. + A. M.

1 Pegasi W. A. R. + A. M.

+ Pegasi W. A. R. + A. M.

+ Aquarii W. A. R.

9 Deneb W. A. R.

No. = 618

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100

Oct-16/872

~~W.A.R. R.J.~~
~~W.A.R. R.J.~~
 Circle E

W.A.R. R.J.

A.M. M.B.

{ 61 Cygni, W.A.R. + A.M.
 { W.A.R. Lost 1.2

adjusted South Clock for
 beat after 61, Cygni.

β Cephei (19 m.) W.A.R.
 { Aquarii A.M.

ε Pegasi W.A.R. + A.M.

11 Cephei, W.A.R. + A.M.

α Capricorn, W.A.R. + A.M.

79 Draco, A.M.

a Aquarii W. A. R. + A. M.
 1 Pegasi. W. A. R. + A. M.
 4 Pegasi. W. A. R. + A. M.
 7 Aquarii. (19 W.) W. A. R.
 11 Aquarii (19. W.) W. A. R.
 9 Draco. (Ind gr.) W. A. R.

Circle. W.

(7 Piscium. W. A. R. (~~7 W~~))

W. A. R. observes. with M. B. + R.

0 Cephei. W. A. R. (M. B. + R. T.)

7 Pegasi. W. A. R. (M. B. + R. T.)

4 Piscium. W. A. R. (M. B. + R. T.)

1 Draco. W. A. R. (R. T.)

1 Androm. W. A. R. (R. T. + M. B.)

8 Cephei. W. A. R. (R. T. + M. B.)

~~(4 Peg. W. A. R. (R. T. + M. B.))~~

to Pise R. T. W. 1 = 619

2872 Oct 19th

f Pegasi m.b.

1 Cephei RT + m b

2 Pegasi ^{Revered} RT ^{Star faint} ^{MC} ^{Star faint}

3 Cephei RT + m b

4 Pegasi RT

23 20

W.R. 101 with MC

Polaris at 5-7-8

2 Perseus 1^h 30^m at 678 (9?)

1 Perseus 1^h 35^m at 5-6-7-8-9-1-2

3 Andromeda 21 m

W.R. 156 21 m exact at 45

4 Andromeda 21 m

5 Andromeda 20, 21 m

6 Andromeda 21 m at 1, 2, 3

7 Andromeda 21 m at 1, 2, 3

Oct 19 1872

2 Arctis ~~2~~ 30 17 N.

u beti 2 38 21 W

2 Perseu 21 W

4 Arctis A 34567 A₁, A₂

5 Perseu 21 W

WV = 2W

2 = 621

Work off 2 shot at 11^h 30^m ST Morning

Oct 20 452
 244 R. do. 26
 144 R. read
~~the~~ my-622

Oct 21 1872

MAR Jb. Pb.

WSP veds.

A.M. with M. G.
WSP Jb. with R.P.

(C. E.)

7 Cygnus WSP.

a Cephei W.A.R. + A.M.

1 Draco. A.M. rej. 1st gr.

d Ursa Maj. W.A.R. + A.M.

B Cephei W.A.R. + A.M.

E Pegasi W.A.R. + A.M.

11 Cephei W.A.R. + (A.M. rej. A-1)

12 Capricorn W.A.R. + A.M.

79 Draco. A.M.

a Aquarii W.A.R. + A.M.

1 Pegasi W.A.R. + A.M.

+ Pegasi W.A.R. (19 m)

~~Reverae R.J. C.W.~~

A.M. R.J. W.A.R. M.C.

γ Aquarii A.M. (md. gr.)

(π Aquarii W.A.R. + A.M.)

(W.A.R. false break.)

9 Draco A.M. + M.A.R.

A.M. rej. 1st Wire

Vol - 123
2 - 624
3 - 625
4 - 626

226 β Cephei A.M. + W.A.R.

3 Pegasi W.A.R. + A.M.

W.A.R. rattles in A.M.'s 1st

gr. Last A. - 1

1 Pegasi W.A.R. + A.M.

~~Reverae C.W.~~

1 Cephei W.A.R. + A.M.

Oct. 21

a Pegasi W.A.R. + A.M.

γ Piscium W.A.R. + A.M.

υ Cephei W.A.R. + A.M.

ν Pegasi W.A.R. + A.M.

θ Piscium W.A.R. + A.M.

~~χ Draco~~

W.A.R. R.Y.

A.M. M.B.

(χ Draco W.A.R. + A.M.)
(W.A.R. Post 1st wire)

λ Androm W.A.R. + A.M.

γ Cephei W.A.R. + A.M.

φ Pegasi W.A.R. + A.M.

α Piscium W.A.R. + A.M.

α Androm W.A.R. (19W)

~~γ Pegasi~~ W.A.R. (19W)

χ Draco
Polaris min 6^h 40^m 1.45W.

Oct 28

2 A. R. + A. M.

Obs. with R. T. & R. T.

W. R. with R. T. (C. E.)

W. M. with M. C.

x Aquarii W. A. R. + A. M.

II Aquarii W. A. R. + A. M.

9 Draco W. A. R. + A. M.

2 Aquarii W. A. R. + A. M.

226 β Cephei W. A. R. & Ind. gr

and fold & last gr.

3 Pegasi W. A. R. + A. M.

7 Pegasi W. A. R. + A. M.

6 Cephei W. A. R. + A. M.

a Pegasi W. A. R. + A. M.

Oct. 28

W. A. R. M. C.

A. M. R. T.

γ Pscuum. W. A. R. + A. M.

o Cephie W. A. R. + A. M.

✓ Pegasi W. A. R. + A. M.

W. A. R. rattles in A. M. 1st gr.

+ Pscuum W. A. R. + A. M.

A. M. 1st gr. ?

1 Draco, W. A. R. + A. M.

A. M. Lost 2. W. A. R. 1st gr.

~~1 Androm. W. A. R. + A. M.~~

γ Cephie W. A. R. + A. M.

~~A. M. B. T. Ind. gr.~~

mid mid mid gr.

φ Pegasi W. A. R. + A. M.

Reversed R. T. C. W
Gr. 4163 W. A. R.

o Pscuum W. A. R. + A. M.

a Androm W.A.R. & A.M.
 4 Draco. W.A.R. & A.M.

~~6 Ceti A.M. All the way~~
 6 ^{Grave} Draco, A.M. 5 w m p.

a Car 21 w w. M.

B 6 etc 21 w w. M.

W.R. obs. with R.T. C.W.

E Pisan 21 w

B Androm 21 w

T Pisan 21 w

Polaris 9 w m p.

Polaris with M.C. & A. Rattle
 before each mile

H Pisan 14 12
 42 20
 9 4 27 41 33219

u Penn

$$\begin{array}{r}
 47 \ 59 \\
 42 \ 23 \\
 \hline
 536
 \end{array}$$

43 Cars

$$6724$$

Rij 124 gmp

$$\begin{array}{r}
 42 \ 23 \ 21 \ w \\
 2501
 \end{array}$$

L Pic

$$\begin{array}{r}
 4 \ 50 \\
 42 \ 23 \\
 \hline
 37 \ 30 \\
 322 \ 30
 \end{array}$$

9 w

o Pic

$$\begin{array}{r}
 8 \ 31 \\
 42 \ 20 \\
 33 \ 52
 \end{array}$$

326 08

$$w1 = 627$$

$$2 \ 628$$

$$3 \ 629$$

Oct 29 1872

W.R. Dr. for duplicate
perennial egg.

E.S. Dr.

E. S. Dr.

A.M. Dr. on sheet no 1

R.B. Dr. on sheet no 2

A.M. completed.

Obs.

Oct. 29, 1872.

W.H. Brewster R.I. Co
S.M. des. R.I. Co

Oct 29.

a Aquarii W.A.R. (21 W)

1 Pegasi W.A.R. + A.M.

4 Pegasi W.A.R. + A.M.

4 Aquarii, A.M.

8 Aquarii W.A.R. + A.M.

11 Aquarii W.A.R. + A.M.

9 Draco. W.A.R. + A.M.

W.A.R. Obs. 10. + 6. Wires.

226 B Cephei ~~W.A.R.~~ A.M.

3 Pegasi W.A.R. + A.M.

1 Pegasi W.A.R. + A.M.

1 Cephei W.A.R. + A.M.

W.A.R. Obsd. 10 + 6.

A.M. R. J.

W.A.R. M.C.

a Pegasi W.A.R. + A.M.

γ Piscium W.A.R. + A.M.

o Cephei W.A.R. + A.M.

A.M. Obs'd 10. + 4 Wires

✓ Pegasi W.A.R. + A.M.

θ Piscium W.A.R. + A.M.

x Draco W.A.R. + A.M.

A.M. Obs's 10. + 4. Wires

γ Cephei W.A.R. + A.M.

A.M. Obs. 10 + 6. Last 1st 2 W.

Reversed by E.W.
 φ Pegasi W.A.R. + A.M.

Gr. 4163

W.A.R. 5 Wires A. 3.4.5.6.7

o Piscium W.A.R. + A.M.

a Androm W.A.R. + A.M.

4 Draco. W.A.R. + A.M. 10 + 6

Ceti A.M. (21 Mars)

W.R. de Vries R.

E Piscum

B. Anderson

P. Piscum

Palais am R. T. H.

n Pisc 124

332 19

2 Penn 130

5 36

43 Cars 132

25-0/21 u

1 Pisc 134

3223 92

0 Pisc 138

3260

a 4 Nagel

2857

4223

34634

1526

ξ Pisc

233

4223

3550

32010

Oct 30

Put book Old dia-
 phogram. The one taken
 out having served its
 purpose of getting the ex-
 position between single & double
 lines, and being not quite
 as good as the old ones.
 Adjusted for perpendicularizing.

Nov = 630
 631
 632 ✓

1872 Nov. 2

2 Aquarii W.A.R. (29 W.)

3 Pegasi W.A.R. + A.M.

4 Pegasi W.A.R. + A.M.

5 ~~Cephei~~ W.A.R. + A.M.

W.A.R. 10 + 4 W.

6 Pegasi W.A.R. + A.M.

7 Piscium W.A.R. + A.M.

A.M. A. + A.

8 Cephei W.A.R. + A.M.

W.A.R. 10 + 4.

A.M. R.J. W.A.R. M.B.

9 Pegasi W.A.R. + A.M.

10 Piscium W.A.R. + A.M.

11 Draco W.A.R. + A.M.

A.M. East 1st W. 10 + 6 W. West A.M.

1872 Nov. 2

λ Androm. W. A. R. & A. M.
γ Ephē. W. A. R. & A. M.
A. M. 1045

@ Piscium A. M. & W. A. R.

A - Androm. W. A. R. & A. M.
Reversed R. J. G. W.

4 Draco. W. A. R. & A. M.

W. A. R. A₊ & A₋ & A. 5 false

observation pr. by W. A. R.

1 Ceti ~~W. A. R.~~ A. M.

12 Ceti W. A. R.

K Draco. A. M. (21 W)

B Ceti A. M. (21 W)

a Casspr. A. M. (21 W)

32 Cass A. M. 3, 4, 5, 6, 7

indg.

E Piscium A. M. & W. A. R.

now 2
W R m R T

B Andromeda now 603

T Pis' Cien 2-604

3-635

Polaris

now M. 6. now 8 = lot 2

now R T

2 Pisc 124 3 mil vms

4 Pisc 130 5 36

43 Cors 132 25 0 / lot 102

1 Pisc 134 322 30

0 Pisc 138 326 08

a Trappist 346 34

Nov 4 1872

Wth Dr. D. B.
Wth vcds tree

J. F. M. begins to record
at 22^h 15^m

Wt-636

2-637

nov 7
 W. R. des f. t. m. e.
 nov = 638

nov 8
 W. R. des f. t. m. e.
 nov 1 = 639

nov 9
 W. R. des f. t. m. e.
 nov 1 = 639

Nov 13

W.R. No. 16.

J. T. M. reads

W.R. reads for 2 18^h 2^m

Nov-640

Nov 14

Nov 1-641

J. T. M. reads.

Nov 16 1872

W.R. Dr. Ph.

W.R. Roads till 2242

J.F. M. roads for 2242

W.R. Dr. none,
Ch. failed

W.R. Dr. Ph.

Nov 1 = 642

2 = 643

3 = 644

Nov 1872

W.R. Sh. P.B.

W.R. veds. Tie 22 18^h

J. F. veds. 22 18

Nov - 645

2 = 646

~~3 = 647~~

Nov 18 1872

f. f. m. obs

38 Cass A1 ind. & fol

50 Cass II Vr

γ Androm ind

Nov 4 = 6.18

Nov. 19 1872 ✓

2 obs. P.B.

W. Redstone

$W = 648$

Being very bad

Nov 20

WKR Dr P. L.

WKR Recd Dec 3rd

WKR Dr Nov 20th

R P M uab

no 1 = 645

2 = 650

Seeing good

Nov 21/87 2

Mr. Robt. Alp.

W. H. R. ucds.

any good

Nov = 657

Nov. 23

W.A.R. Obs. P. C

W.A.R. Rec. 23 till
23, 50

W.A.R. Obs. Done - D.C.
J. H. M. Rec.

$$201 = 657$$

$$2 = 653$$

$$3 = 654$$

1872 Nov. 25

~~W~~ J. F. M. Obs.

w Piscium $23^h 53^m + 6.9$

last 3. wires

γ Pegasi $0^h 6^m + 14.28$

last 3. wires

J. F. M. in Polar Book
at $0^h 18^m$

Sch. 9 $0^h 18.27 + 71.06$

X Cass $0 25 43 + 12.13$

W. A. R. commences at $0^h 36^m$

J. F. M. records, $\text{Ref} = 655$
 $2 - 656$

Set and note of S. E. after observation
 Nov 25. Suppose $\text{rate} = 0$ Put
 on 2 strips (for much)

Nov. 26

From this date the
 Collimation will be corrected
 for diurnal aberration. This
 is done for C. E. J. by subtracting
 from the ^{the reading of the} line of no Colli-
 mation $.0157 = \cancel{.022} \text{ dir } 0.012 \text{ dir}$
 it. The set of wires must be
 moved east.

Nov 27 '12 ✓

220 R Dr RB.

W. A. R. red stur^h 22 B

W. A. R. the zone

J. F. M. Rec.

Ja F. M. Rec from

23^h 19^m All end

$m = 6.57$

D9C 2

W. R. has time stars.

a's May. 10^h 55^m

✓ Lev 11 7

✓ Brot. 11 12

✓ Proc. 11 23

Wt = 65 lb

After three observations, the two pieces of lead which were put on Nov. 25 were ~~weighed~~ ^{weighed} on Mr. Hobbs's scales. The two pieces = a change of 208. From this weight it was found that the large shot in the box in the upper drawer of the clock room table = 10^s each and the small ones = $.05^s$ each. The ^{large} pieces of lead in the same box = $.22^s$ each and the small ones = $.10^s$ each.

Dec 3 Put on 2^s weight.

Dec. 3

W. A. R. Oba. Zone - P. C.
J. F. M. Rec.

$m = 6.5$

Dec. 4

attempts

M. A. R., Obs. zone + P. C.

no. = 660

But seeing clouds.

1872 Dec. 6

J. F. M. Obs. in stars

T Piscium 1^h 4^m 35^{sec}

Polaris. 1 11 00

38. Cass. 1^h 21 47 X

40 Cass 1 28 20 X

lost 1st 4 W. of Ind. gr.

Gr. 339 1 34 09

E Cass. 1 45 08 X

en 404 1 50 00

50 Cass. 1 52 37

γ Androm 1 56 01

1 Cars 2 18 38

36 Cass 2 25 54 X

9 Arctis 2 31 32

$N_1 = 661$

Dec 7/1872

$$\begin{array}{r} 12 \\ 25 \\ 47 \\ 55 \\ \hline 239 \end{array}$$

W. R. obs. P. B.

$$\begin{array}{r} 141 \\ 164 \\ \hline 305 \end{array}$$

240

W. R. read the P. B.

W. R. obs. zone

M = 662

J. F. M. reads

2 = 663

3 = 664

W. R. obs. Watsons

New Asteroid with Equatorial
Comp #s

$$W_{150}^1 = 4^h 9^m 23^s + 19^{\circ} 35' (1872)$$

$$W_{202}^2 = 4^h 11^m 27^s + 19^{\circ} 36'$$

$$W_{225}^3 = 4^h 12^m 02^s + 19^{\circ} 37'$$

$$\text{Assumed place of planet:} \\ = 4^h 9^m 40^s + 19^{\circ} 38'$$

Order of observation
 Wires = ~~|||||~~

Pl. m (1)

Comp. of (1) & Pl. $1' 00''$
~~0 40''~~

Approx place of $\sqrt{L} = 4.6$ spaces
 below (1) apparent - at $3^h 50^m$

Compare and pl. with 1, 2 & 3
 in A.R.

Postscript order (i)

(2)

(Pl)

(3)

Comp. of pl with 1, 2 & 3 in A.R.

and of pl with 3 in observing
 transit over inclined wire (5.2)

Mag of pl = 9.8

~~|||||~~

Pl 7.3

Dec 10/11 2

W. R. des. O. C.

I. P. M. des.

W. R. des. Wolbach

Astronomical with Equatorial
Comp # = 152 W

49 23 + 19 38

Assumed place of planet =
4 06 56 + 19 41


Des.
Comp of H. v. # 3 sets.

Position angle = $238^{\circ} 50'$

I descended on 45° line

Position angle $50'$

Comp of μ in $\#$ 2 sets.

Stone for δ in first-comp =
 $\frac{1}{3}$ dist. between μ in 4 & 5
 omitted)

After observations found that
 the micrometers were not secured
 due to the tube tight. Observations
 may be doubtful for this
 week -

$\mu_1 = 661$

$\mu_2 = 666$

Dec 13 1872

 λ Persei 22 40.22

Pec wires all, of mid gr & fd

i Cephei 65-32 omitted
Mark 3 of mid gr to be

Dec 14 1872

49 η Cephei 1^h 01^m 18^s. all same
first wire~~Palas 1-11-00. 2.6 W of mid gr~~ ~~η Piscum 1-24-37~~~~40 Cass 1-28-20 J. alt of mid gr & fd.~~ ~~ϵ Cass 1-45-8 J. 7. m. 3~~~~Orion 1-50-8.7 of mid gr & fd~~~~J. Androm 1-56-01 J. 7. m.~~ ~~α Arietis 1 59 58~~

i Cass 2-18-28 J. 7 M

d Arctis 2-31-32. f. 10
 of 142nd of Ind. fr. marshes
 Theaters front

① Perrei 2-35-28 Ind. fr.

T 11 2-43-0

Dec 17/72

Reversed for D. to E.

Adjusted Microscope

Reading Circle now
east-

No 7 = 667

J. A. R. Des. true stars (2)

J. A. R. Des. Watson's planet-

Comp # = $3^{\circ} 57' 47''$ ^{h m s} (1872) + $19^{\circ} 46'$ star pr. and apparently below
order of des.

(N 30° S 45° 5 min AR) #

(5 min AR S 45° S 30°) Pl.

P for 1st two Companies = 235-45
 P for last two " " 55-45

May 10.0

Dec 181872 Morning
 W.R. Dr. time stars

.241-668

Dec 19

W.R. Robs. P.O.

I. F. M. veds

Clouded up. Brod. Lenny

Int = 669

Dec 21
 44Rds PB
 44Rued till 2358
 44R attempts a zone
 but gives it up after a
 time of 25 minutes the
 observations being useless
 on account of any body being

$$\begin{aligned}
 \text{not} &= 676 \\
 2 &= 671
 \end{aligned}$$

Dec 22.

44 Rds, Pb.

W H R veds.

Ch faced to 23 34

Garnets being horrible

Thin stars

7 br/ll.

a Rhynchon

22 Indium

Nov 7672

Dec 23 1822
W. R. R. R. R.
J. B. Muddy
W. R. R. R. R.
no. 1 = 6 7/8

Dec 23

196 = 1^h 50^m

193 = 2 50

163 = 3 50

3000

550

Vol = 674

220 241572

2.8.

W.C.

Q. G.

A B

$$\begin{array}{r} 51 \\ -27 \\ \hline \end{array}$$

$$\begin{array}{r} 47 \\ -28 \\ \hline \end{array}$$

$$\begin{array}{r} 48 \\ -30 \\ \hline \end{array}$$

$$\begin{array}{r} 146 \\ 49 \\ \hline \end{array}$$

$$\begin{array}{r} 85 \\ -28 \\ \hline \end{array}$$

$$\begin{array}{r} -1.6 \\ \hline \end{array}$$

$$\begin{array}{r} -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} -1.8 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ -1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 0.7 \\ \hline \end{array}$$

$$\begin{array}{r} -0.8 \\ \hline \end{array}$$

$$\begin{array}{r} -1.0 \\ \hline \end{array}$$

$$\begin{array}{r} 64 \\ -22.58 \\ \hline \end{array}$$

$$\begin{array}{r} 57 \\ -23.30 \\ \hline \end{array}$$

$$\begin{array}{r} 37 \\ -0.50 \\ \hline \end{array}$$

$$\begin{array}{r} 3042 \\ \hline \end{array}$$

$$\begin{array}{r} 520 \\ \hline \end{array}$$

$$\begin{array}{r} 354 \\ \hline \end{array}$$

$$\begin{array}{r} 44.471 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 7948 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.974 \\ \hline \end{array}$$

$$\begin{array}{r} 43.487 \\ \hline \end{array}$$

$$\begin{array}{r} 474 \\ \hline \end{array}$$

$$\begin{array}{r} 478 \\ \hline \end{array}$$

$$\begin{array}{r} 462 \\ \hline \end{array}$$

$$\begin{array}{r} 466 \\ \hline \end{array}$$

$$\begin{array}{r} 367 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

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$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 44.462 \\ \hline \end{array}$$

$$\begin{array}{r} 469 \\ \hline \end{array}$$

$$\begin{array}{r} 480 \\ \hline \end{array}$$

$$\begin{array}{r} 475 \\ \hline \end{array}$$

$$\begin{array}{r} 462 \\ \hline \end{array}$$

$$\begin{array}{r} 354 \\ \hline \end{array}$$

$$\begin{array}{r} 44.471 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

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$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

$$\begin{array}{r} 43.477 \\ \hline \end{array}$$

Dec 24

Yarkovsky's exads
P.b.Attempted some but
gas failed.Desired Watson's plant
with Equatorial

order observations

(5 mins - 54° - 536°) Pl.(636° 541° 5 mins) #

Mag = 10.2

Composition same as Derry

ml = 675

2 = 676

Dec 25

244 R. A. & v. 2000

$$\begin{array}{rcl}
 +18 & = & 23 \\
 -02 & = & 0
 \end{array}
 \quad
 \begin{array}{r}
 06 \\
 15
 \end{array}
 \quad
 \begin{array}{r}
 3043 \\
 550
 \end{array}$$

13.3	12.8	54.2	55
13.8	7	9	3
13.8	8	7	2
13.7	9	5	3
13.3	.6	9	3
29	38	32	24
13.54	12.76	54.64	55.48
	67		

Dec 28 1872

ε Androm 0-31-45

21 Cass 0 37 14

γ Cass 0 49 0

ε Piscum 0 56 11

50 Dec 30

45-46	-17	-03
37 40	16	-0.7
40 39	18	-03
<u>122</u>	<u>21</u>	13
407	-1.70	-0.43
-4.17		

V.C.

43453 44507

447

507

440

550

401

504

447

500

2382508

43, 448

44502

48 448

7950

43.576

108 = 1.15

6.8 = 3.8

6.1

30.47 = 3.45

57.2

not - 668

WAL RUP T M ueds.
 WAL RUP ROME
 WAL RUP RLO.

Jun 1 1873

W R ds Pb,

W R ucds till 2.4

W R ds some

W R ds, Pb

9 T m ucds

being pretty good

$$208 = 23 \text{ } ^h 50$$

$$17.2 = 1 \text{ } 45$$

$$15.2 = 2 \text{ } 55$$

$$14.2 = 3 \text{ } 50$$

3839 *

66, 0

Jan 1

E G

36.9	36.2	21.0	21.0
36.7	36.2	20.8	21.7
35.8	35.8	21.0	21.4
36.7	36.2	20.9	21.5
36.2	36.5	21.2	21.5
<u>32.3</u>	30.9	4.9	21.
36.46	36.18	20.98	21.42

227-669

2 670

31 671

672

1872phae.proj.1644a

88 55
42 23
46 32
31.3 28

6

