XXV. True apparent right ascension of Dr. Maskelyne's 36 stars for every day in the year 1821

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at one-third, 3, at one-fourth, 4, &c. Also at two-thirds the length is marked $1\frac{1}{2}$, at two-fifths, $2\frac{1}{2}$, &c. And so of all the fractions, sufficiently minutely. These numbers extend as high as the specific gravity of platina;—the pivot of the instrument represents unity, and a notch is made at the further end.

In using this instrument, any convenient weight is suspended by a hook from the notch at the end of the scale. The body under examination is to be suspended to the other end by a horse-hair, and slid along till an equilibrium is produced. It is then, without altering its situation on the beam, to be immersed in water, and balanced a second time by sliding the weight. The hook of the latter then marks the specific gravity on the scale.

The demonstration of this is very simple. The instrument being supposed in equilibrium, and BD (see figure) and the weight of the counterpoise being constant, the weight of the body varies as the distance of the counterpoise from B, by the common principle of the lever. Hence, if C be the place of the weight at the conclusion of the operation,

Weight in water : weight in air : : BC : BA. And, by subtraction, the loss of weight in water : weight in air : : AC : AB ; and hence

$$\frac{\text{wt. in air}}{\text{loss}} = \frac{AB}{AC} = \text{the spec. grav. ; which is the rule. Q. E. D.}$$

Substances lighter than water may have, if necessary, their specific gravity ascertained by the usual method ; a scale of equal parts being cut on the opposite side of the beam, and the article to be weighed placed in a notch for the purpose. For mineralogy, however, this will seldom be necessary. The bottom of the notch A (at the smaller end) should be in a line with the edge of the scale, its sides being a little raised. The top of the shorter end should be rather the thickest part of it, to allow the horse-hair, by which the mineral is suspended, to swing clear. This mode will be found very delicate and accurate, and a hook must not be used, as it cannot be balanced.

The instrument, in this form, is exceedingly compact, and may be reduced to a simple rod.

The principle is capable of being applied (as in an instrument I have made) to an arc of a circle, with a rod resembling in its application a common bent lever.

XXV. *True apparent Right Ascension of Dr. MASKELYNE'S 36 Stars for every Day in the Year 1821. By the Rev. J. GROOBY.*

[Continued from p. 52.]

True apparent Right Ascension of Dr. Maskelyne's 36 Stars. 111

1821.	7 Pegasi.	8 Arietis.	9 Ceti.	10 Alde- baran.	11 Cap- pella.	12 Rigel.	13 Tauri.	14 β	15 Ori- onis.	16 Sirius.	17 Castor.	18 Pro- cyon.	19 Pol- lux.	20 Hy- dra.	21 Re- gulus.	22 β Leo- nis.	23 Vir- ginis.	24 Spica Virginis.	25 Arc- turus.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
	0 3	1 57	2 52	4 25	5 3	5 5	5 15	5 15	5 45	6 37	7 23	7 29	7 34	9 18	9 58	11 39	11 41	13 15	14 7
Oct.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
1	583	1045	5984	4346	3358	5956	306	3240	1790	1331	5843	2432	4939	5204	5204	5725	2317	4816	3166
2	83	46	86	49	62	59	09	43	93	35	46	35	35	41	06	26	18	16	65
3	83	48	86	51	66	61	13	46	96	38	49	38	44	08	28	19	16	16	65
4	84	49	90	54	71	64	16	52	99	41	52	42	46	10	29	21	17	17	64
5	84	50	92	57	75	67	19	52	1802	45	55	45	45	49	12	30	22	17	64
6	84	52	94	60	79	70	23	55	05	48	58	48	51	14	31	23	17	17	63
7	85	53	96	63	83	72	26	58	08	52	61	52	53	16	33	24	17	17	63
8	85	55	97	65	87	75	29	61	10	56	64	56	56	18	35	26	18	18	63
9	85	56	99	68	91	78	33	64	13	60	67	59	59	21	36	28	19	19	63
10	85	57	53000	71	95	80	36	66	16	16	63	70	62	61	24	38	29	19	63
11	85	59	02	73	99	83	39	69	19	19	67	73	65	64	26	40	31	20	63
12	85	60	04	76	3403	85	42	72	22	22	71	76	69	66	29	41	33	21	63
13	85	62	05	79	06	88	45	75	25	25	74	79	72	69	31	43	34	22	64
14	85	63	07	81	10	91	48	78	28	28	78	82	76	72	34	45	36	23	64
15	85	64	09	84	14	93	52	81	31	31	82	85	79	74	37	46	38	23	64
16	85	66	10	87	18	96	55	84	34	34	86	88	82	77	39	48	40	24	64
17	85	67	12	90	22	99	58	87	37	37	89	92	86	79	42	50	41	25	64
18	85	68	13	92	26	6001	61	90	40	40	93	95	90	82	45	52	43	26	64
19	85	69	15	94	30	04	64	92	43	43	97	98	93	85	48	54	45	27	65
20	85	70	17	96	33	06	67	95	46	46	1400	5901	97	88	50	56	47	28	65
21	84	71	18	99	37	09	70	98	49	49	04	04	2501	91	53	58	49	30	65
22	84	72	20	4401	40	11	73	3301	52	08	07	04	94	94	56	60	51	31	66
23	84	72	21	03	44	14	76	03	55	11	10	10	08	96	62	53	32	32	66
24	84	73	23	06	48	16	80	06	58	15	13	11	11	99	61	64	55	33	67
25	83	74	24	08	51	19	83	09	61	19	19	16	15	5002	64	66	57	34	68
26	83	75	26	10	55	21	86	12	64	23	23	19	19	05	67	68	59	35	69
27	83	76	27	13	59	24	89	15	67	26	26	23	22	08	70	70	61	37	70
28	83	76	29	15	62	26	92	17	70	30	30	25	25	11	73	72	63	38	70
29	83	77	30	17	66	28	95	20	73	34	34	28	29	14	76	75	66	40	71
30	82	78	31	19	69	30	97	23	76	37	37	31	33	17	79	77	68	42	72
31	82	79	32	21	72	33	401	26	78	41	41	34	36	20	82	79	71	43	73

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1821.	1 ^a Libræ	2 ^a Libræ	Cor. Bor.	Ser- pentis	An- tares.	Her- culis.	Ophiu- chi.	Lyre	γ Aquilæ	α Aqui- læ.	1 ^a Capri	2 ^a Capri	α Cygni	Aqua- lout.	Pom- pæ.	Pæ- gasi.	Andro- medæ.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
Oct.	14 40	14 41	15 27	15 35	16 18	17 6	17 26	18 30	19 37	19 42	20 7	20 8	20 35	21 56	22 47	22 55	23 59
1	50-13	1-58	8-36	29-46	28-44	31-61	40-11	54-67	48-01	6-05	34-39	10-58	22-44	39-11	48-92	54-93	13-30
2	12 56	56 35	35 45	45 43	43 59	59 09	09 09	65 65	48-00	03 38	82 38	57 42	42 10	92 92	92 92	92 92	30 30
3	12 56	56 33	33 44	44 42	42 57	57 07	07 62	60 60	47-98	01 36	81 36	56 39	39 09	92 92	92 92	92 92	31 31
4	11 55	55 32	32 43	43 40	40 56	56 06	06 60	58 58	95 95	5-98	33 33	53 53	35 35	08 08	91 91	92 92	31 31
5	11 55	55 31	31 42	42 39	39 54	54 04	04 02	55 55	93 93	96 96	32 32	51 51	32 32	07 07	90 90	91 91	31 31
6	11 55	55 30	30 41	41 38	38 55	55 02	02 55	53 53	92 92	95 95	30 30	50 50	30 30	06 06	89 89	91 91	32 32
7	11 55	55 29	29 40	40 37	37 51	51 40	40-01	53 53	91 91	93 93	28 28	49 49	27 27	05 05	89 89	91 91	32 32
8	10 54	54 28	39 36	49 31	49 36	49 36	39-99	50 50	89 89	92 92	27 27	48 48	25 25	04 04	88 88	90 90	32 32
9	10 54	54 27	39 35	49 35	48 98	48 98	97 97	46 46	87 87	90 90	25 25	46 46	23 23	03 03	87 87	90 90	32 32
10	10 54	54 26	38 34	47 34	47 34	47 34	95 95	44 44	86 86	89 89	24 24	45 45	21 21	02 02	87 87	90 90	32 32
11	10 54	54 25	38 33	47 33	47 33	47 33	93 93	41 41	84 84	87 87	22 22	43 43	19 19	02 02	86 86	89 89	32 32
12	10 54	54 24	37 32	46 32	46 32	46 32	92 92	39 39	83 83	86 86	21 21	42 42	16 16	01 01	85 85	89 89	32 32
13	09 53	53 24	36 31	43 31	43 31	43 31	90 90	36 36	81 81	84 84	19 19	40 40	14 14	39-00	84 84	88 88	32 32
14	09 53	53 23	36 31	43 31	43 31	43 31	89 89	34 34	80 80	83 83	18 18	39 39	12 12	38-99	83 83	87 87	32 32
15	09 53	53 23	35 29	40 29	40 29	40 29	87 87	32 32	78 78	81 81	16 16	37 37	09 09	98 98	82 82	87 87	32 32
16	09 53	53 22	35 28	40 28	40 28	40 28	86 86	29 29	77 77	80 80	15 15	36 36	07 07	97 97	82 82	86 86	32 32
17	09 53	53 21	34 27	39 27	39 27	39 27	85 85	27 27	75 75	78 78	13 13	34 34	04 04	96 96	81 81	86 86	31 31
18	09 53	53 21	34 26	39 26	39 26	39 26	84 84	25 25	73 73	77 77	12 12	33 33	22-02	95 95	80 80	85 85	31 31
19	09 53	53 20	34 26	39 26	39 26	39 26	83 83	23 23	71 71	75 75	10 10	32 32	21-99	94 94	79 79	84 84	31 31
20	09 53	53 20	33 25	39 25	39 25	39 25	82 82	20 20	70 70	74 74	09 09	30 30	97 97	93 93	78 78	83 83	30 30
21	10 54	54 19	33 25	39 25	39 25	39 25	81 81	18 18	68 68	72 72	07 07	28 28	95 95	91 91	77 77	82 82	30 30
22	10 54	54 18	33 24	39 24	39 24	39 24	80 80	16 16	66 66	70 70	06 06	27 27	92 92	90 90	76 76	81 81	30 30
23	10 54	54 17	32 23	38 23	38 23	38 23	79 79	14 14	64 64	69 69	04 04	25 25	89 89	89 89	75 75	80 80	29 29
24	10 54	54 17	32 23	38 23	38 23	38 23	78 78	11 11	63 63	67 67	03 03	24 24	87 87	88 88	74 74	79 79	29 29
25	11 55	55 16	31 22	37 22	37 22	37 22	76 76	09 09	61 61	65 65	01 01	22 22	84 84	87 87	73 73	78 78	28 28
26	11 55	55 16	31 22	37 22	37 22	37 22	75 75	07 07	60 60	64 64	34-00	21 21	82 82	86 86	72 72	77 77	28 28
27	12 56	56 15	31 21	37 21	37 21	37 21	74 74	05 05	58 58	62 62	33-98	19 19	79 79	85 85	71 71	76 76	27 27
28	13 57	57 15	31 21	37 21	37 21	37 21	73 73	03 03	56 56	61 61	97 97	18 18	77 77	83 83	70 70	75 75	26 26
29	14 58	58 15	31 21	37 21	37 21	37 21	72 72	02 02	55 55	59 59	95 95	17 17	74 74	82 82	69 69	74 74	26 26
30	14 58	58 15	31 21	37 21	37 21	37 21	71 71	00 00	53 53	58 58	94 94	15 15	71 71	81 81	68 68	73 73	25 25
31	15 59	59 15	31 20	37 20	37 20	37 20	71 71	00 00	53 53	58 58	94 94	15 15	71 71	81 81	68 68	73 73	25 25