A short story of the Irish eclipses and occultations

Marek Zawilski

IOTA/ES

Polish Association of Amateur Astronomers

Lodz Division

Section of Observations of Positions and Occultations

Situated west of the European continent, Ireland has witnessed many interesting eclipses and occultations.

Our story begins with a very old solar eclipse, which was reported in an Irish chronicle (***Annals of Ulster***) for the first time in the British Isles!

The first solar eclipse recorded is that of June 26, 512.
The next phenomenon was dated in 591 but its true date was July 23, 594.
The account seems to be unique and real due to the correct time of the day and the fact that the chronicler could not have had any prediction of the eclipse and wrote as an eyewitness.

594 VII 23

Annála Uladh

(The translation into English available)

Annals of Ulster
A Chronicle of Irish Affairs
from A.D. 431 to A.D. 1540
vol.I

AD 591. An eclipse of the sun, that is, a dark morning.

Ulster, IRELAND

COMMENTS

The entries up to 1489 AD were compiled in the late 15th century by the scribe Ruaidhrí Ó Luinín. The original date was wrong since the eclipse of 590 (on October 4) occurred not in the morning; the eclipse of 594 was total at Ulster in the morning hours.

s.ca. 1500

Title source


594 VII 23

In the Middle Ages, chronicle records related to many other solar and lunar eclipses.

Date (correct)	Phenomenon	Description	Source
512 VI 29	Solar eclipse		Annals of Ulster
594 VII 23	Solar eclipse	Dark morning	Annals of Ulster
664 V 1	Solar eclipse	Darkness at 9th hour of the day	Annals of Tighernach Annals of Ulster
676 III 5?	Lunar eclipse	Bloody moon	Annals of Ulster
691 XI 11?	Lunar eclipse	Bloody moon	Annals of Ulster
718 XI 13?	Lunar eclipse	During the full moon	Annals of Ulster
753 I 9	Solar eclipse	A dark sun	Annals of Ulster
762 I 15	Lunar eclipse	A dark moon	Annals of Ulster
763 VI 16?	Solar eclipse	A dark sun at the third hour	Annals of Ulster
773 XII 4	Lunar eclipse	A dark moon	Annals of Ulster
788 II 26	Lunar eclipse	A red bloody moon	Annals of Ulster
807 II 26?	Lunar eclipse	Bloody moon	Annals of Ulster
865 I 1	Solar eclipse		Annals of Ulster
865 I 15	Lunar eclipse		Annals of Ulster
878 X 15	Lunar eclipse		Annals of Ulster
885 VI 16	Solar eclipse	Stars seen	Annals of Ulster
921 XII 17	Lunar eclipse	At 1st hour of the night	Annals of Ulster
1023 I 24	Solar eclipse	On Thursday	Codex Clarend
1030 VIII 31	Solar eclipse		Codex Clarend


885 VI 16
Stars seen


1023 I 24
No data recorded

1652 IV 8

Vincent Wing
Astronomia Brittanica, 1669

Ergo autem tunc *Carigfergi* (seu *Knocfergi*) in *Hibernia* ad sinum maris sitae existens, ut *Medicus*, ex *Senatus-consulto, Copiis Anglicanis*, in partibus istius Regionis Septentrionalibus, notavi hanc Eclipsin per totum ejus decursum, Coelo existente sereno (praesente uno mihi familiari, qui ibi in horto quodam Sciatericum seu Solarium horizontale, super lapidem quondam molliusculum, Scandulam Scoticam dictum, optime laevatum, ad istuis Urbiculae antiquissimae Palatine, seu Regiae, latitudinem fecerat, uti eam super Globum terrestrem, vel Mappam aliquam Geographicam, gr. 54 $^{2}/_{3}$ circiter, invenerat. Atq; sic nos simul una observatione in Solis Altitudine meridian (sed non tamen accurate, ob defectum satis exacti Instrumenti…)[…]

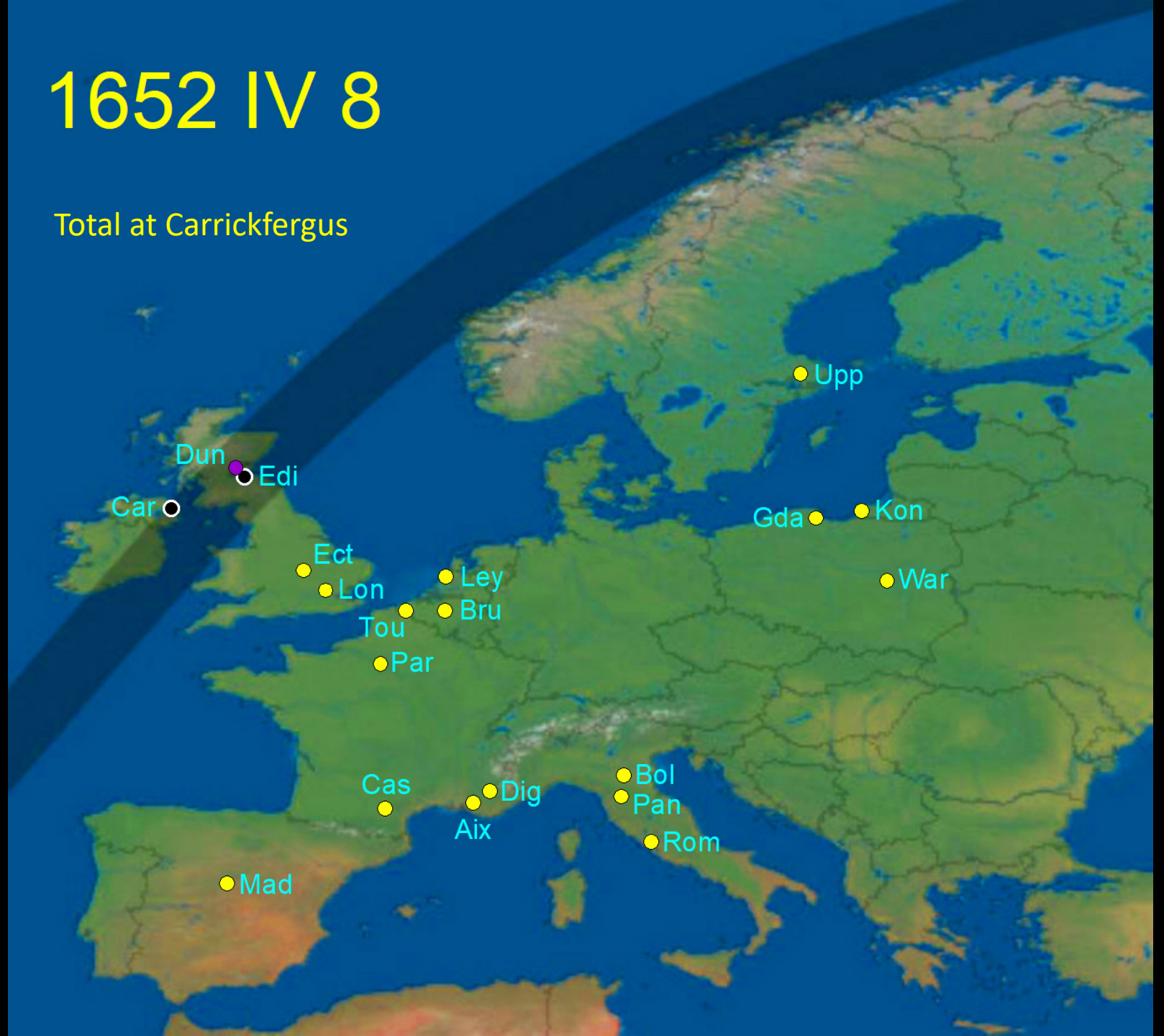
Quum autem Eclipsis eosq; progressa esset, ut ⊙ aegere admodum lumen emitteret, adeo quod umbram Stili seu Gnomonis super Solarium haud ita facile percipere potuimus (particular Solis nondum obscurata directe quasi versus Orientem, instar Lunae corniculantis, cum, secunda circiter vespera post, vel potius penultimo matutino ante Conjoncionem interdium conspiciatur apparente (quam utranq; accuratissimus & acutissimus ille *Selenographus, Jo. Hevelius* peculiariter *Lunam corniculatam* appelat, illam nempe *crescentem*, hanc *decrescentem*) Luna momento quasi et ex improvisò, totam se intra Disci Solis orbitam seu ambitum (quatenus conspectui nostro appareret) tam agiliter injiciebat, *ut circumagere aut circumvolvere videretur*, sicut Catillus seu *Lapis Molaris superior* (Cursor dictus) Sole tunc circumcirca ejus limbum seu marginem splendidulo vel corusco apparente, ut esset quasi *Spectaculum Rotationis* dictum, aspectu sanè valde jucundum ac notatu gignum, et quidem aequaliter undique post unum temporis minutum (tamquam conjectere poteram) circiter dimidium digiti aut 1/3 saltem (quantùm etami conjicere licebat) instar circuli luciduli, vel Coronae subrutilae, et tunc pro certo centraliter conjuncta erant *Luminaria* quoad apparentiam. […]

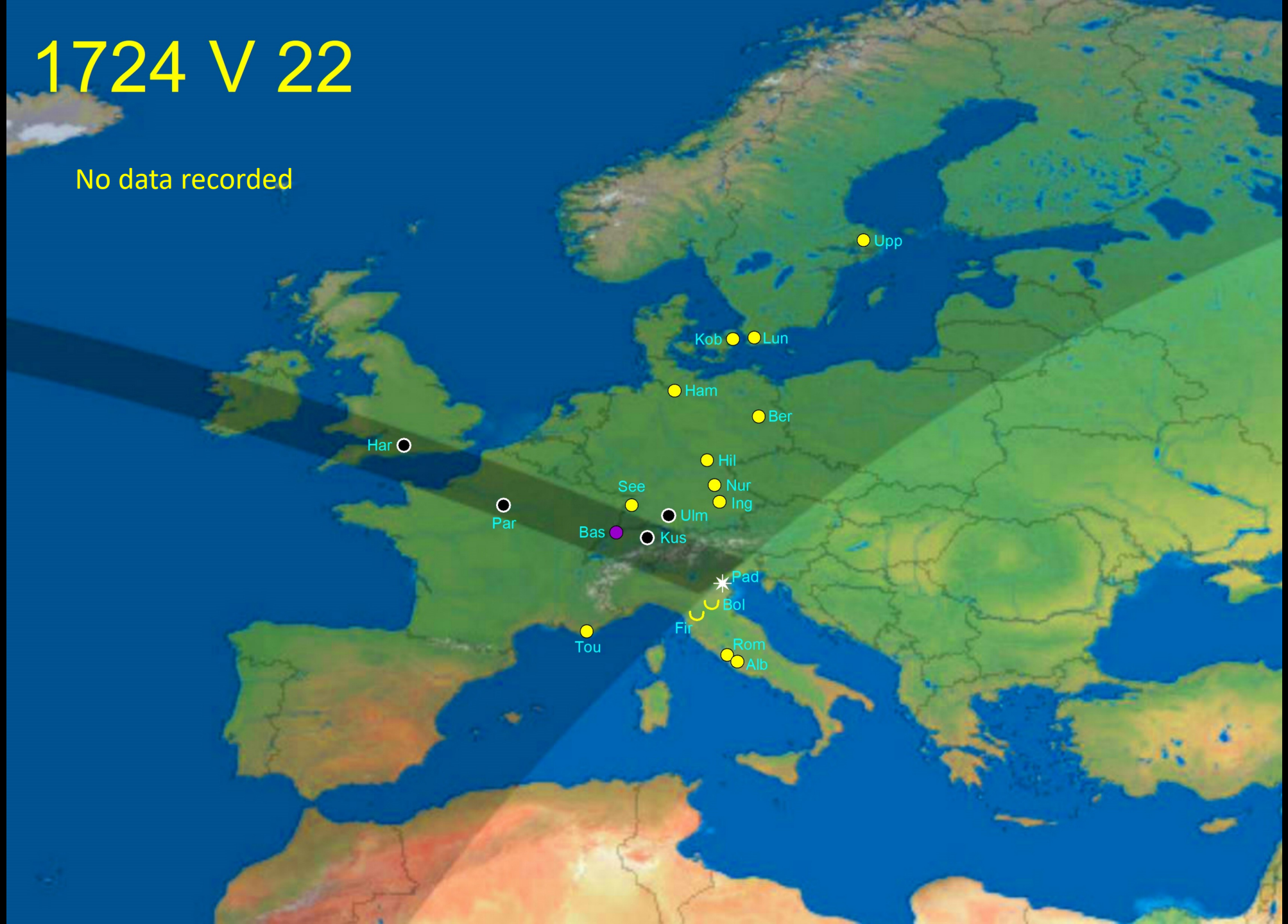
The observer was dr.Wyberd

When, however, the eclipse had progressed, so that the Sun emitted a weak light, to such extent that on this condition the shadow of the gnomon on the sundial was not easily perceivable, in particular the Sun not yet eclipsed, directed as if towards the east like a horned Moon, and after some time about toward the west, or rather like it is sometimes visible in the last morning before the conjunction [i.e. the new moon] (which both these invokes its most accurate and most keen selenograph Johann Hevelius, in particular the horned Moon, namely increasing and decreasing one), the Moon all at once threw herself within the margin of the solar disc with such agility that she seemed to revolve like an upper millstone, affording a pleasant spectacle of rotatory motion. In reality the Sun was totally eclipsed, and the appearance was due to a corona of light round the moon, arising from some unknown cause. It had a uniform breadth of half a digit, or a third of a digit at least, it emitted a bright and radiating light, and appeared concentric with the Sun and Moon when the two bodies were in conjunction.

1652 IV 8

Total at Carrickfergus




1724 V 22
No data recorded
Upp
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Ulm
Bas
Kus
Pad
Bol
Fir
Tou
Rom
Alb

Title: On a Remarkable Phenomenon that occurs in Total and Annular Eclipses of the Sun

Authors: Baily, F.

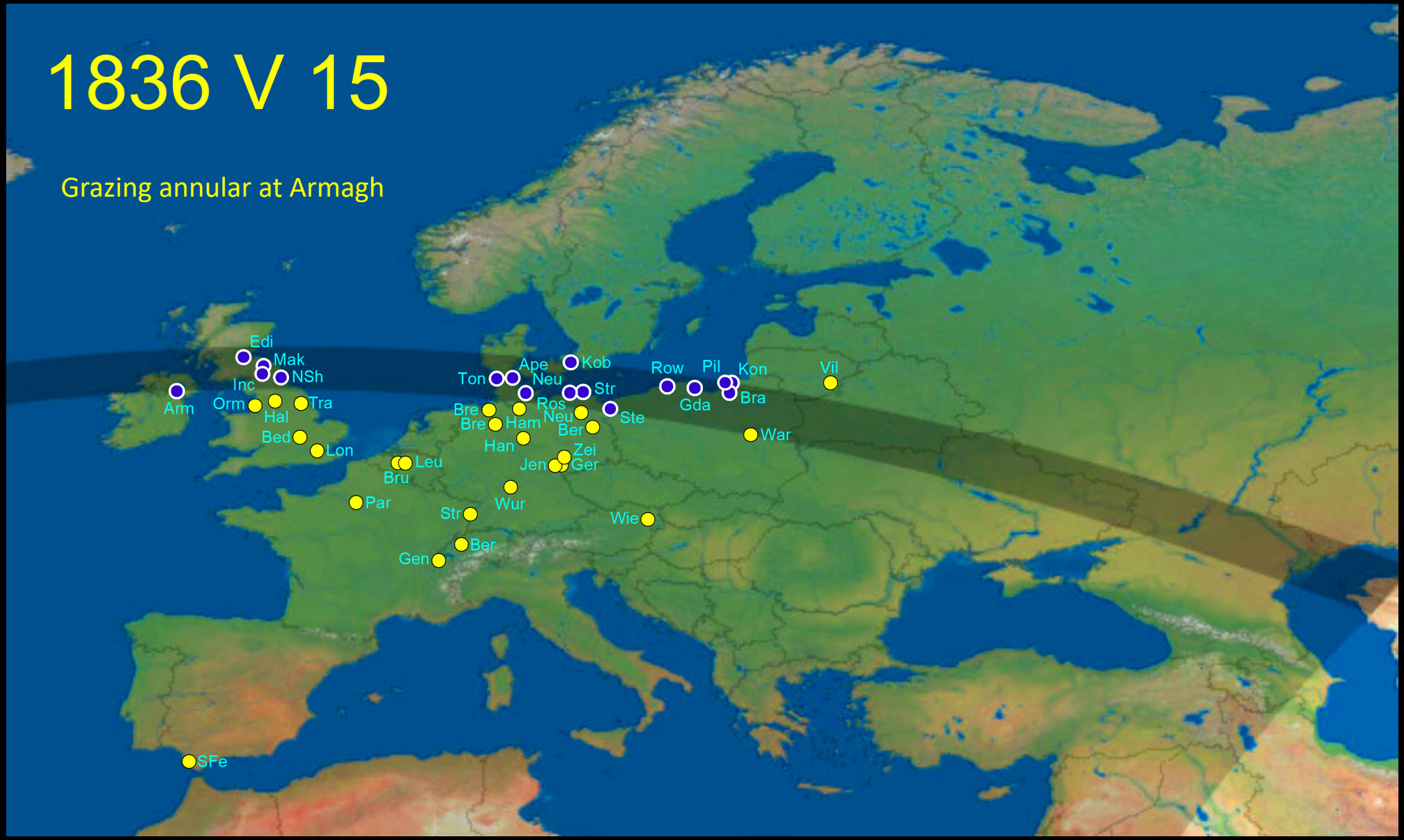
Journal: Memoirs of the Royal Astronomical Society, Vol. 10, p.1

The observation of the annular solar eclipse on May 15,1836 by Thomas Romney Robinson

A somewhat similar result, though not so fully detailed, is recorded by the Rev. Dr. Robinson, who observed the same eclipse at Armagh. It appears from Dr. Robinson's account, which accompanied the particulars of his observation,† that the luminous cusps were connected by a thread of light, frequently *interrupted by lunar mountains*, at $2^h\ 42^m\ 24^s,04$: that the maximum breadth of this occurred at $2^h\ 42^m\ 36^s,01$, *intersected however by two or three lunar mountains:* and that the cusps were disconnected at $2^h\ 42^m\ 45^s,98$. It would seem therefore that at no period was the annulus (according to the commonly received opinion) completely formed at Armagh: since there was always an interruption of the complete circle of light by those dark ligaments (or lunar mountains) so frequently alluded to in this paper. Dr. Robinson adds that the projections which intersected the annulus were sharp and well defined: but he remarks that he looked in vain for the indication of a lunar atmosphere, said to have been seen on similar occasions; and that not the slightest trace of the moon's circumference could be seen *off* the sun.

1836 V 15

Grazing annular at Armagh



Volume 17, Issue 3, January 1857, Pages 51–85

Occultation of Jupiter, January 2, 1857, observed at the Armagh Observatory. By Mr. N. M'Neil Edmondson.

(*Communicated by Dr. Robinson.*)

	h	m	s
Immersion of 4th Satellite	4	23	56·62
,, 3d ,, ...	4	29	42·18
Contact of Jupiter noticed at	4	35	0·81
Immersion of Jupiter	4	37	6·46
Immersion of 2d Satellite	4	38	23·25

The telescope was a 15-inch Cassegrain, with a power of 260. No change was noticed in the planet. Mr. Edmondson estimated the time of the 4th satellite's entrance to be $0^s.5$, and that of the 2d to be $0^s.75$. The dark limb was barely visible.

The Occultation of Jupiter, as observed at Oxford.

Communicated by the President.

Immersions and Emersions in Oxford Mean Time.

	Mr. Johnson.	Mr. Pogson.	Mr. Quirling.
	h m s	s	s
Immersion, · 4th Sat.	4 39 10·3	15·3	

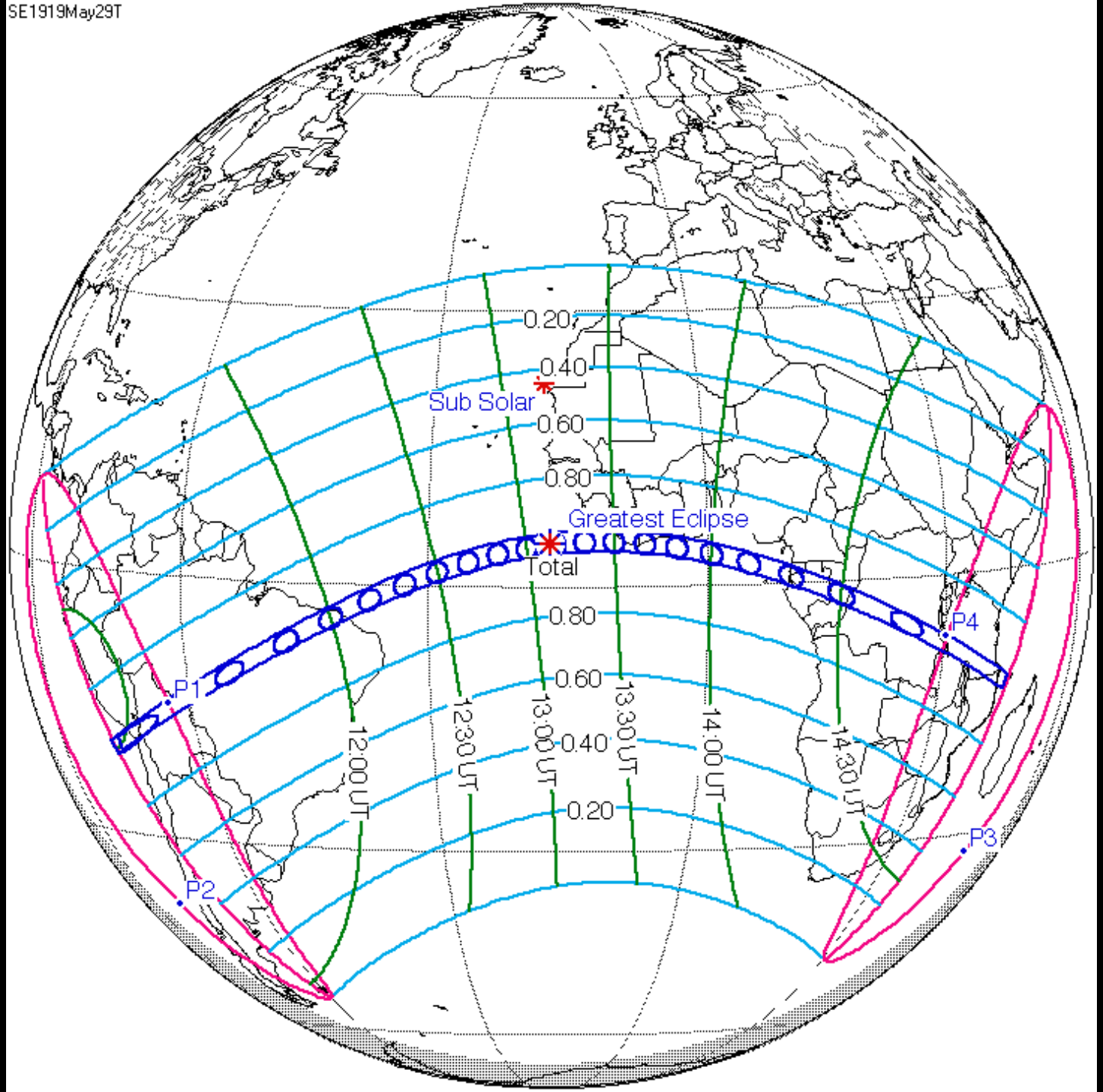
LUNAR OCCULTATIONS

1	1886-01-16	19:46:04.200	R	692	D	D		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.99	Dr. Patrick Arthur Wayman	1964-19
2	1886-01-16	19:46:05.600	R	692	D	D		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.57		
3	1886-01-16	19:46:06.100	R	692	D	D		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.40		
4	1886-01-16	20:35:52.100	R	692	R	B		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	-0.94		
5	1886-01-16	20:35:52.800	R	692	R	B		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	-0.76		
6	1887-10-13	04:42:15.399	R	1487	D	D		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.09		
7	1887-10-13	05:45:57.199	R	1487	R	B		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	-0.27		
8	1888-01-28	22:32:13.200	S	98159	D	D	lunar eclipse	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.42		
9	1888-01-28	22:32:19.399	S	98159	D	D	lunar eclipse	-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.63		
10	1888-01-28	23:24:20.799	S	98176	D	D	lunar eclipse	-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.27		
11	1888-01-28	23:45:02.300	S	98159	R	D	lunar eclipse	-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.80		
12	1888-01-28	23:45:16.500	S	98159	R	D	lunar eclipse	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	-0.56		
13	1888-01-29	00:04:36.000	S	98176	R	D	lunar eclipse	-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.25		
14	1888-01-29	00:07:41.199	S	98176	R	D	lunar eclipse	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	-0.28		
15	1914-12-01	18:07:22.800	R	537	D	D		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.13		
16	1914-12-01	18:10:55.219	R	536	D	D		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.37		
17	1914-12-01	18:34:13.679	S	76152	D	D		-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	-0.32		
18	1914-12-01	18:40:26.959	R	539	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	2.75		
19	1914-12-01	18:41:14.830	R	541	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.23		
20	1914-12-01	19:04:14.940	R	543	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	4.02		
21	1914-12-01	19:08:13.880	R	542	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	5.52		
22	1914-12-01	19:22:23.549	R	548	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.00		
23	1914-12-01	19:45:13.380	R	541	R	B	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	4.60		
24	1914-12-01	20:06:31.869	R	557	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	-0.18		
25	1914-12-29	03:32:34.589	R	536	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.06		
26	1914-12-29	03:54:08.410	R	541	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.35		
27	1914-12-29	04:03:48.739	R	536	R	B	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	6.74		
28	1914-12-29	04:20:39.619	R	548	D	D	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	0.16		

29	1914-12-29	04:30:00.010	R	539	R	B	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	4.40
30	1914-12-29	04:38:48.889	R	541	R	B	Pleiades	-006 20 12.00	+53 23 12.30	Ireland, Dublin Dunsink Obs.	PWayman* 1	3.86
31	1943-01-15	17:33:44.100	R	508	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.44
32	1943-01-18	04:07:14.900	R	814	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.79
33	1943-02-13	00:02:57.200	R	626	D	D	near graze	-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.44
34	1943-03-13	19:38:24.900	R	829	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.50
35	1943-03-14	21:53:49.500	R	985	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.78
36	1943-04-07	20:22:23.399	R	508	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.91
37	1943-04-18	21:45:59.000	R	1821	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	18.74
38	1943-04-18	21:45:59.000	R	1821	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	18.74
39	1943-04-18	22:32:59.000	U	0	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.79
40	1943-05-10	23:17:34.500	R	1260	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.12
41	1943-05-10	23:44:58.199	R	1262	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.14
42	1943-06-10	23:43:39.399	R	1644	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.20
43	1944-01-04	16:20:16.700	R	364	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.49
44	1944-02-17	05:50:20.700	R	2247	R	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.20
45	1944-03-05	01:21:55.900	R	1138	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.05
46	1944-03-06	19:30:25.100	R	1345	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.07
47	1944-03-28	20:25:20.300	R	650	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.18
48	1944-03-31	19:19:51.600	R	1077	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.03
49	1944-04-05	22:15:32.399	R	1625	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.13
50	1944-04-26	21:57:55.100	R	895	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.02
51	1944-09-27	19:03:59.800	R	2988	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.43
52	1944-12-27	17:48:00.500	R	730	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	-0.06
53	1945-01-20	22:21:31.899	R	291	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.40
54	1945-01-21	17:23:08.000	R	405	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.70
55	1945-02-20	18:05:23.400	R	793	D	D		-006 38 52.40	+54 21 11.40	**Ireland, Armagh Observatory**	1	0.33

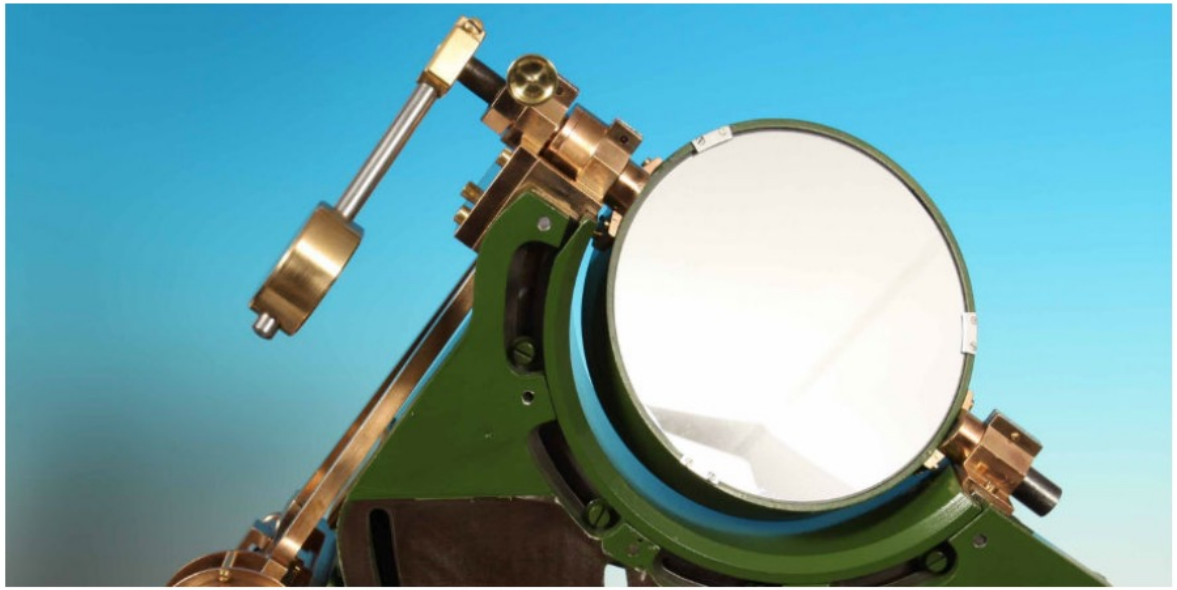
156	1970-02-10	20:14:43.600	R	196	D	D	graze	-006 29 01.00	+53 46 39.00	Ireland, Collon	1	0.01	
157	1970-02-10	20:14:46.100	R	196	R	D	graze	-006 29 01.00	+53 46 39.00	Ireland, Collon	1	-0.02	
158	1970-02-10	20:14:47.399	R	196	D	D	graze	-006 29 01.00	+53 46 39.00	Ireland, Collon	1	-0.20	
159	1970-02-10	20:15:29.200	R	196	R	D	graze	-006 29 01.00	+53 46 39.00	Ireland, Collon	1	0.69	
160	1970-02-10	20:15:35.500	R	196	D	D	graze	-006 29 01.00	+53 46 39.00	Ireland, Collon	1	0.20	
161	1970-02-10	20:16:24.199	R	196	R	B	graze	-006 29 01.00	+53 46 39.00	Ireland, Collon	1	3.18	
162	1979-02-05	18:14:26.900	R	659	D	D	Hyades	-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	0.29	W. Scotland
163	1979-02-05	20:03:08.799	R	669	D	D	Hyades	-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	-0.12	W. Scotland
164	1979-02-05	20:10:52.600	R	671	D	D	Hyades	-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	-0.31	W. Scotland
165	1979-02-05	20:10:54.100	R	671	D	D	Hyades	-004 07 15.00	+55 04 15.00	Ireland, Kenmure,New Galoway	JWhite 1	-0.39	W. Scotland
166	1979-02-05	20:27:24.700	R	672	D	D	Hyades	-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	-0.80	W. Scotland
167	1979-02-05	21:23:56.600	R	677	D	D	Hyades	-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	0.16	W. Scotland
168	1979-02-05	21:23:59.500	R	677	D	D	Hyades	-004 07 15.00	+55 04 15.00	Ireland, Kenmure,New Galoway	JWhite 1	-0.34	W. Scotland
169	1979-02-05	21:28:31.000	R	680	D	D	Hyades	-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	0.08	W. Scotland
170	1979-02-06	22:47:25.799	R	806	D	D	Hyades	-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	-0.38	W. Scotland
171	1979-02-07	00:59:09.399	R	820	D	D		-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	-0.02	W. Scotland
172	1979-02-07	22:08:29.000	R	944	D	D		-004 08 21.00	+55 03 51.00	Ireland, Kenmure,New Galoway	RFraser 1	0.02	W. Scotland
173	1981-01-10	17:37:50.300	S	146556	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	0.23	
174	1981-01-10	18:43:59.000	S	146578	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	0.13	
175	1981-01-10	18:44:10.100	S	146577	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	0.37	
176	1981-01-10	18:44:25.100	S	146574	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	0.34	
177	1981-01-10	18:46:14.900	S	146581	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	0.25	
178	1981-01-17	18:27:27.399	R	863	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	-0.49	
179	1981-02-09	19:05:52.500	S	110061	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	1.16	
180	1981-02-09	19:35:21.899	R	250	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	-0.25	

197	1983-04-17	23:15:05.710	S	77410	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	-0.19
198	1983-04-17	23:19:04.030	R	861	D	D		-006 56 15.00	+52 23 56.00	New Ross Ireland	Cathal Mooney	-0.01
199	2003-02-10	19:58:04.300	R	633	D	D		-006 32 56.30	+54 22 04.75	**Armagh,Ireland Uk.**	J. Farland	0.03
200	2003-02-10	21:17:43.100	R	642	D	D		-006 32 56.30	+54 22 04.75	**Armagh,Ireland Uk.**	J. Farland	-0.22
201	2003-02-11	23:12:47.300	R	789	D	D		-006 32 56.30	+54 22 04.75	**Armagh,Ireland Uk.**	J. Farland	-0.08
202	2004-04-25	21:28:26.100	S	79106	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh Co. Armagh,Ireland Uk.**	John Mc. Farland	0.89
203	2004-04-25	21:35:06.799	S	79109	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh Co. Armagh,Ireland Uk.**	John Mc. Farland	0.02
204	2004-04-25	21:48:35.300	S	79119	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh Co. Armagh,Ireland Uk.**	John Mc. Farland	-0.18
205	2004-04-25	21:58:23.399	S	79122	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh Co. Armagh,Ireland Uk.**	John Mc. Farland	-0.12
206	2005-02-14	22:00:01.299	S	93056	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.09
207	2005-04-14	21:28:11.000	X	9053	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.04
208	2005-04-14	22:19:12.200	S	78410	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.04
209	2005-04-14	22:35:15.100	S	78424	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.04
210	2005-04-14	22:51:04.199	S	78434	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	0.04
211	2005-04-15	20:47:54.600	R	1108	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.08
212	2006-03-03	20:49:32.300	S	92817	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.19
213	2006-04-04	20:33:47.399	S	78480	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.11
214	2006-04-04	20:39:10.199	S	78496	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.08
215	2006-04-04	21:26:43.300	R	1008	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.02
216	2006-05-02	21:34:45.199	R	1088	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.07
217	2006-11-27	18:35:07.600	R	3240	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	-0.05
218	2007-03-04	00:40:05.500	R	1600	D	D		-006 32 56.30	+54 22 04.75	**Richhill, Armagh, Ireland Uk**	John Mc. Farland	4.53

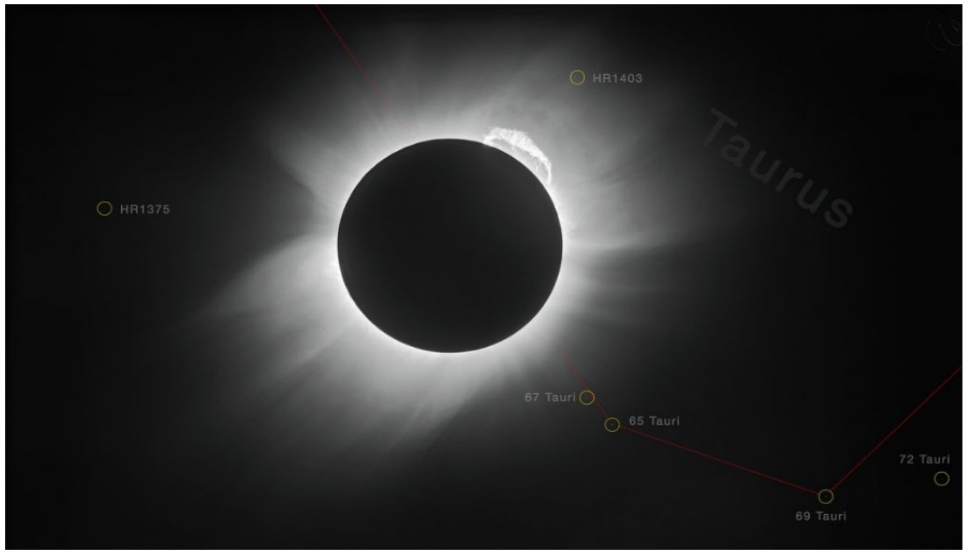


May 29, 1919

Albert Einstein's prediction of the bending of light by the gravity of the Sun



The Grubb Coelostat was manufactured in Rathmines in Dublin and is now kept at DIAS Dunsink Observatory.



High resolution image of the 1919 total solar eclipse from Sobral Brazil. The image was obtained using the Grubb Coelostat which is now on display at DIAS Dunsink Observatory. Full resolution image available from ESO.

The Grubb Coelostat and enhanced image of the 1919 solar eclipse on display at Dunsink Observatory. Photo by Professor Peter Gallagher (DIAS).

Thank you for your attention