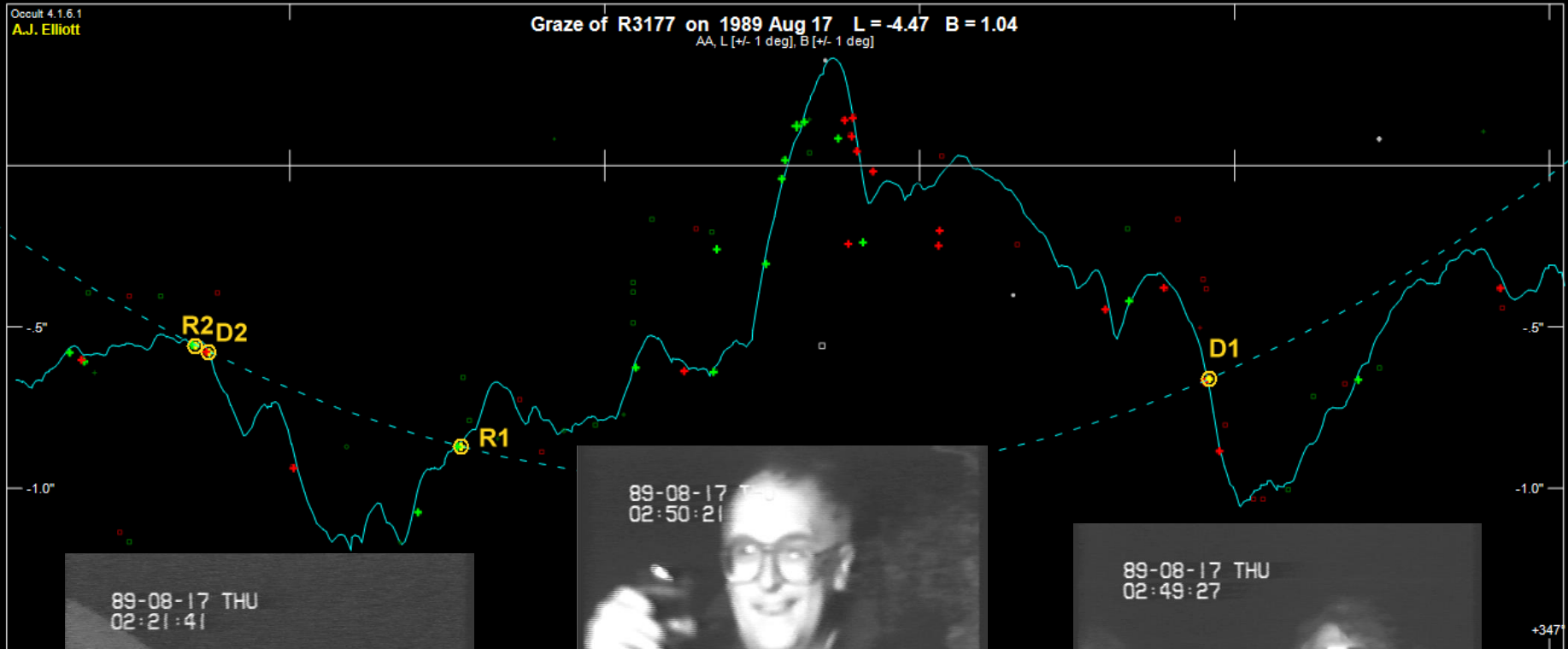


# Revisiting lunar graze observations of 44 Cap – 1989 Aug 17

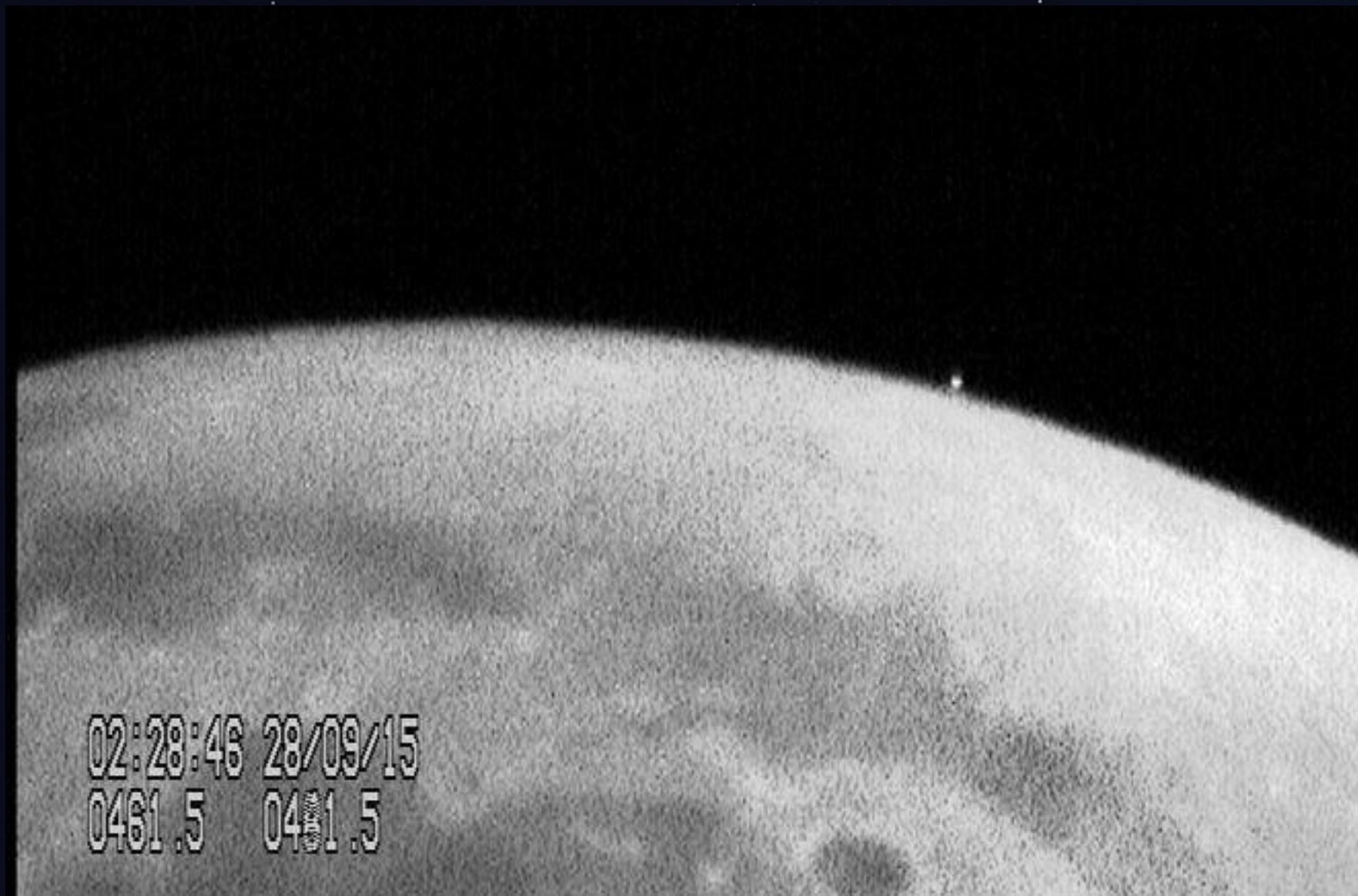


Alex Pratt IOTA-ES BAA

## Grazing occultation during a total lunar eclipse – 2015 Sep 28 – Tim Haymes

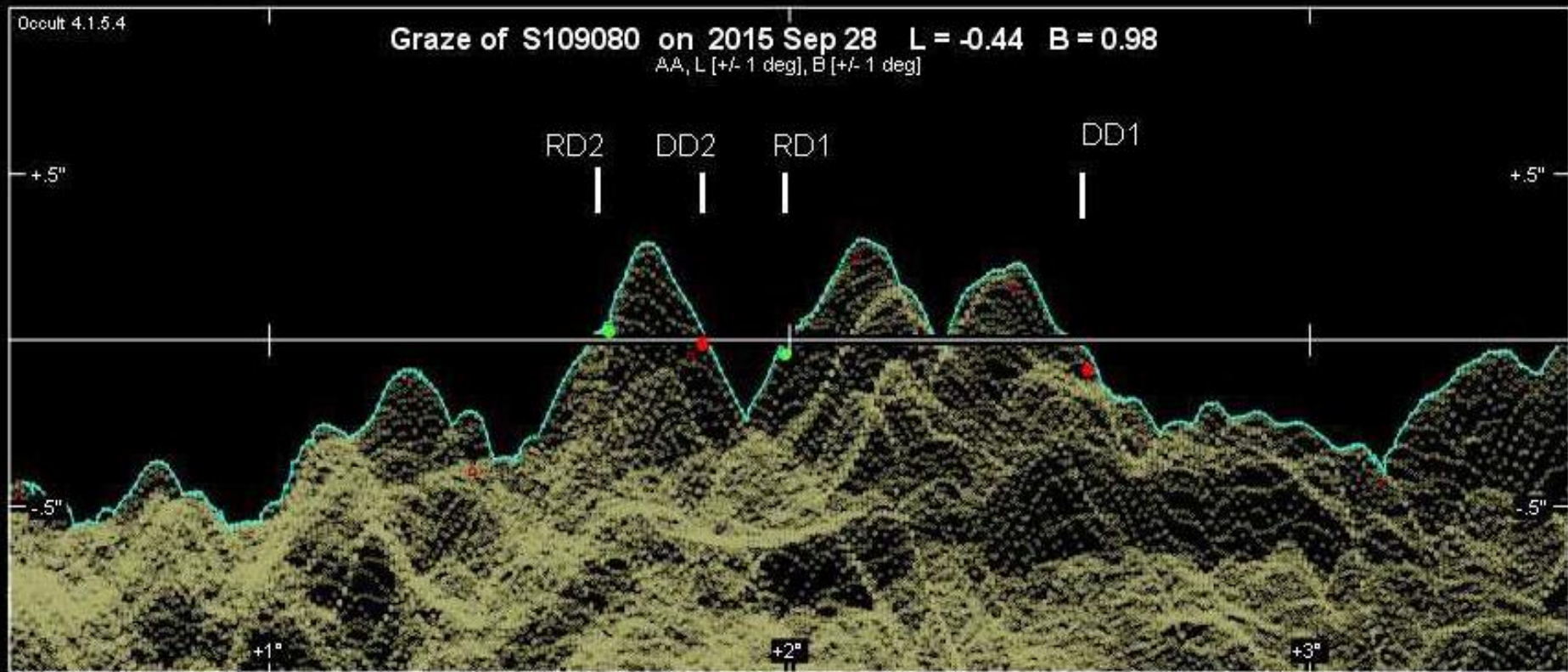


**Video frame of SAO 109080 mag 9.2 – Tim Haymes**





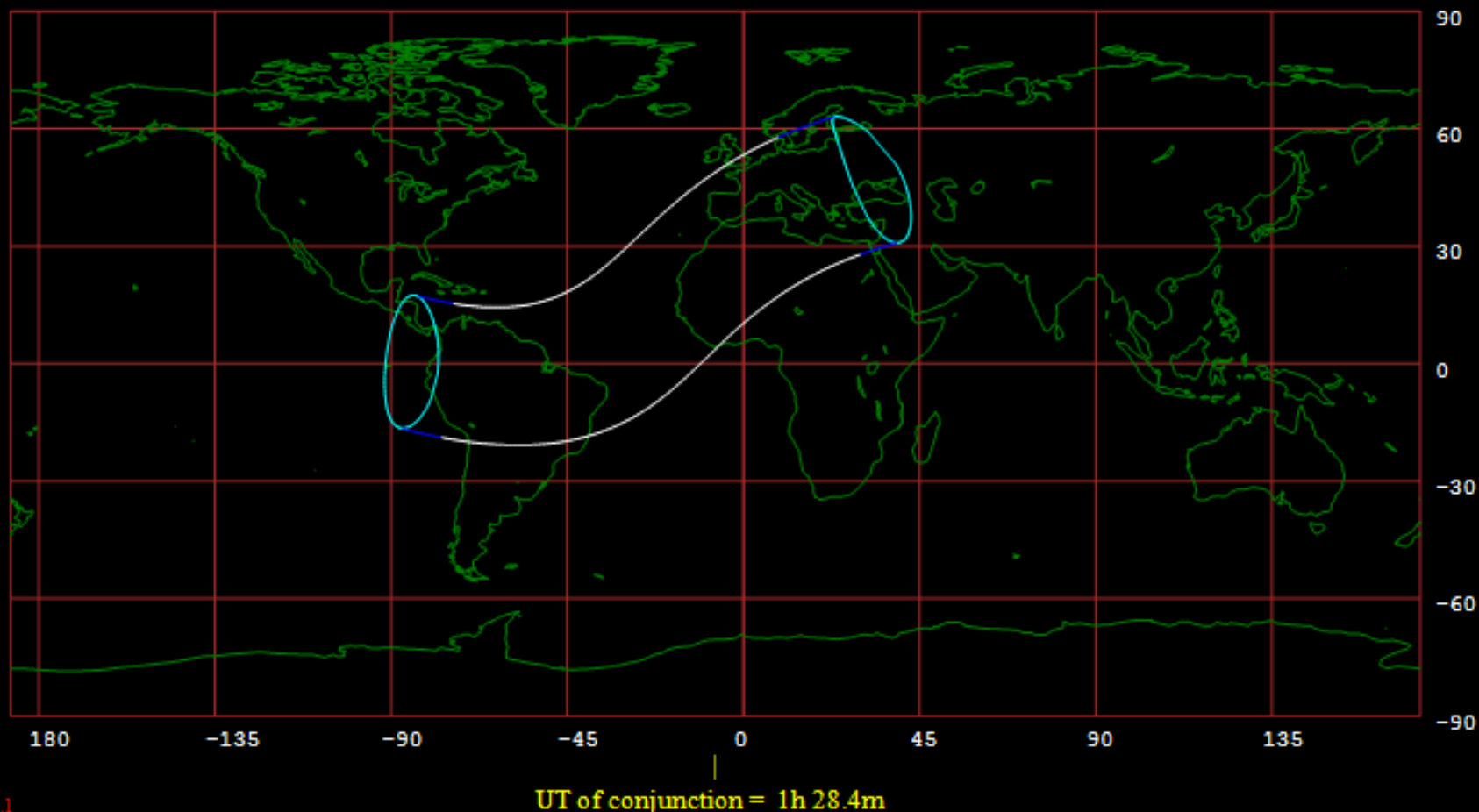
## Graze profile reduction (LOLA data) – Tim Haymes



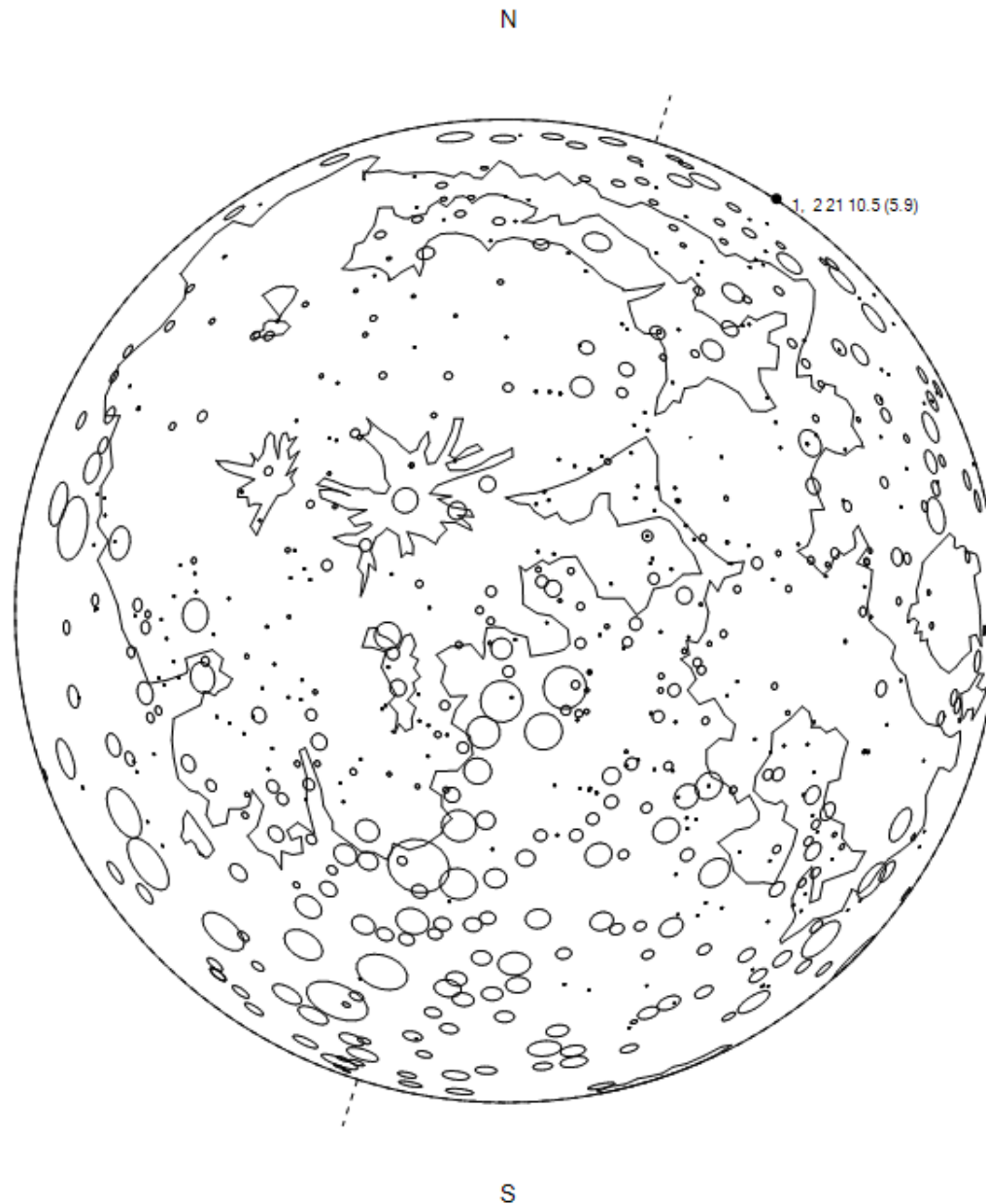
Was it a UK first?

# Occultation of 44 Cap during a total lunar eclipse – 1989 Aug 17

Occultation of 3177cA9, Magnitude 5.9, on 1989 Aug 17



## Moon map – northern limit



## **Observers – 1989 Aug 17**

### **Near Worcester, England...**

**M G J Gough  
G Tyler**

**A J Elliott  
Eberhard Bredner**

**25cm f/6.3 SCT, video camera, image intensifier and MSF receiver  
10cm f/16 refractor**

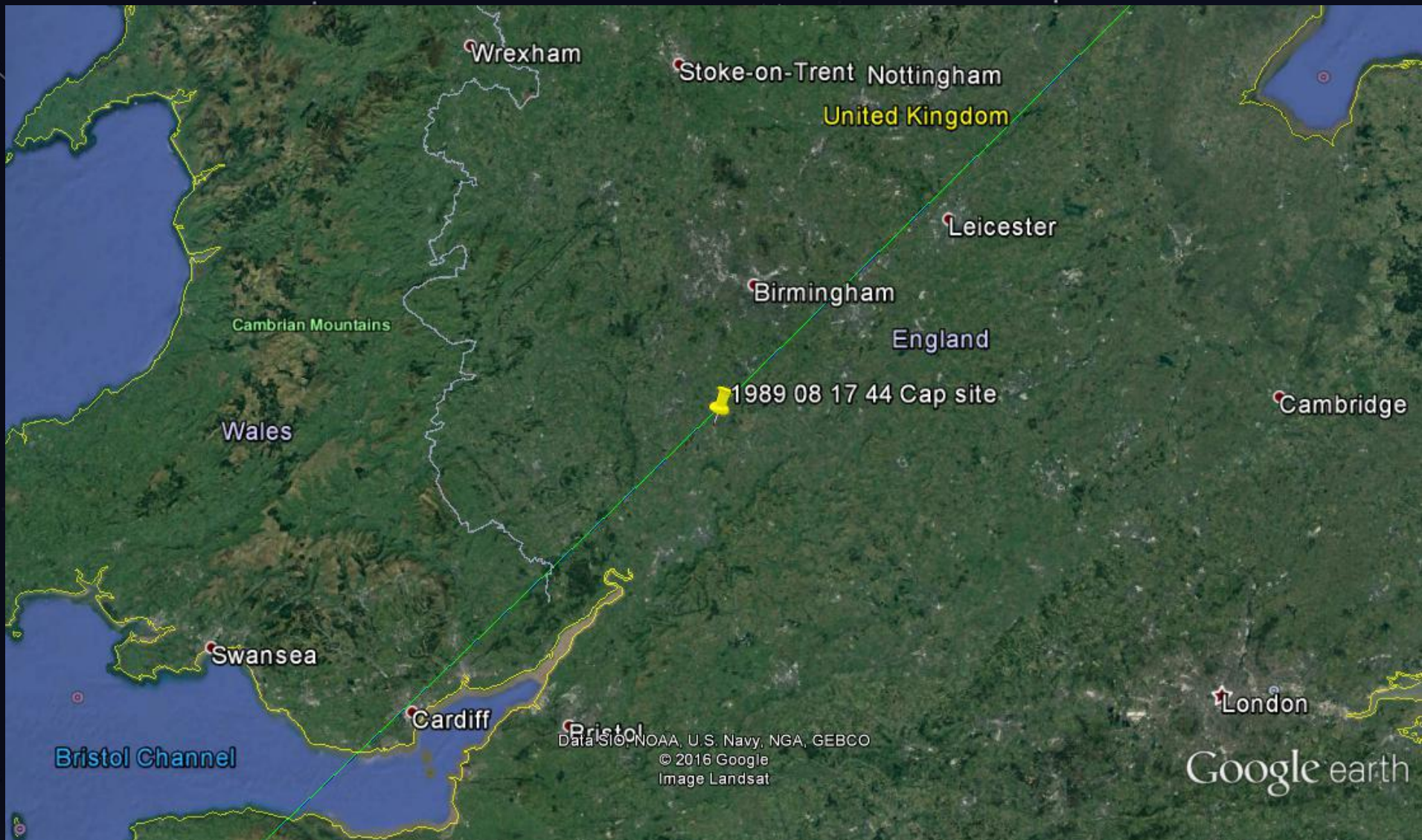
**A O Miller  
J J Howarth  
A O'Hare  
K Sheldon  
A Cockburn  
S Webb**

### **Near Usk, Wales...**

**M Brain  
J Meacham  
Nes Brown**



## Observing site – 1989 Aug 17





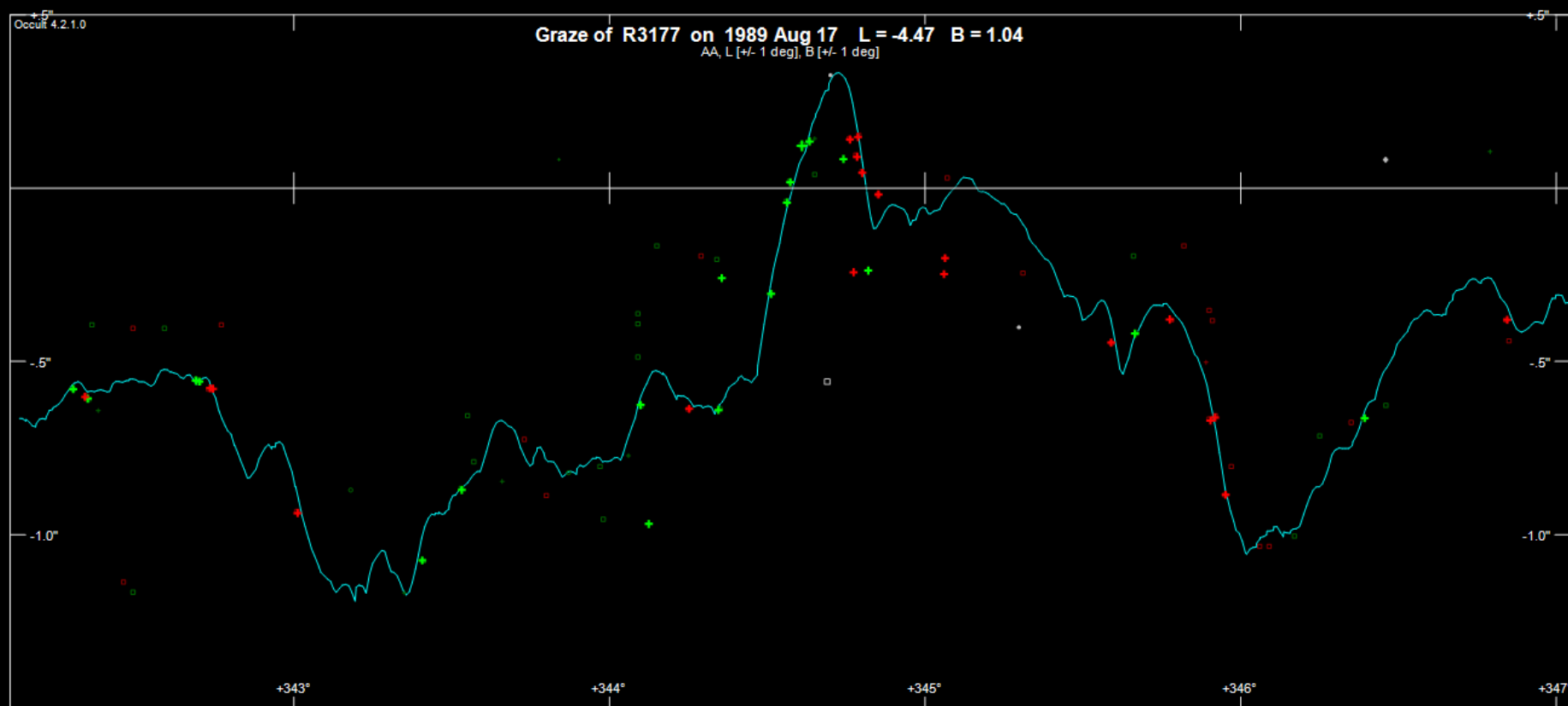
## Observing site – 1989 Aug 17



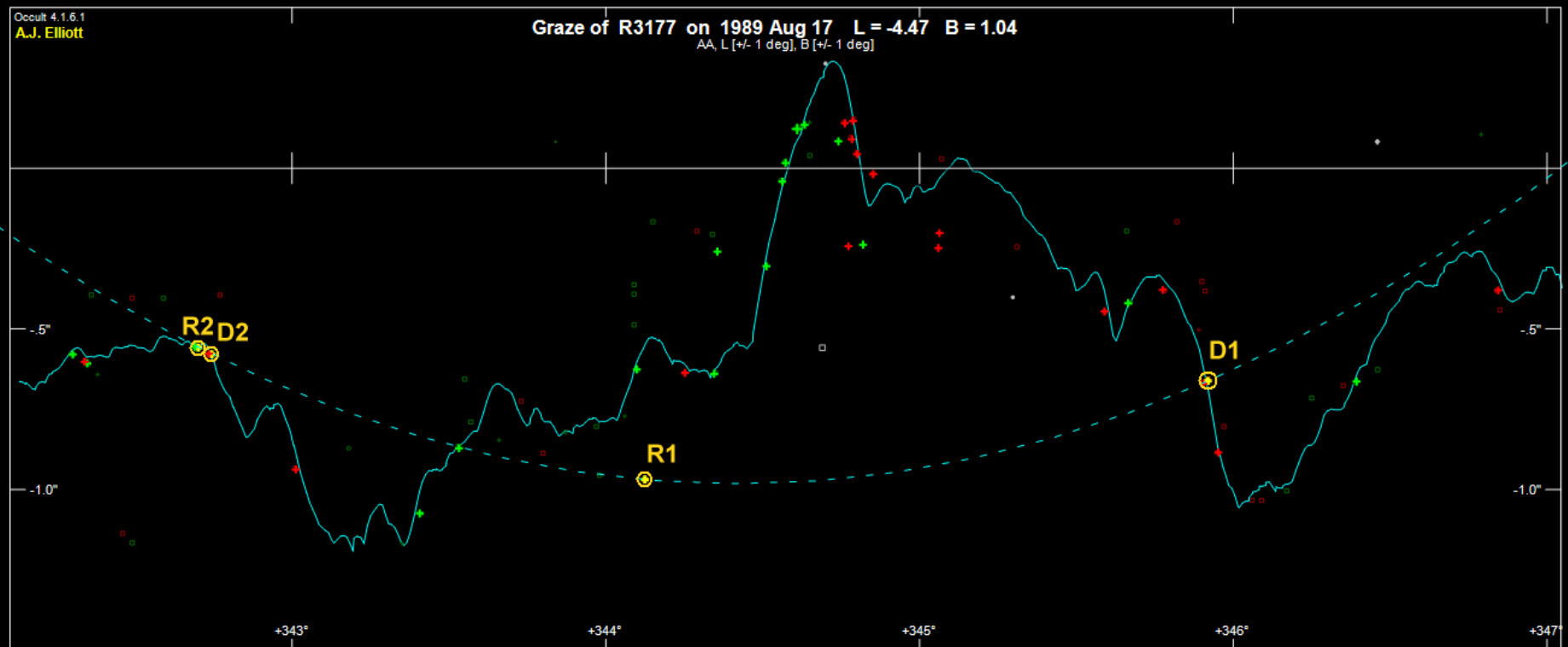
© 2016 Infoterra Ltd & Bluesky

Google earth

# Graze profile reduction (LOLA data) – all observers (Occult4 historical data)



# Graze profile – Andrew's submitted timings



ref	Tel	Observer	Star No.	y	m	d	h	m	s	PhGrMrCeDb	O-C	limb	PA	l	b	AA	P	D	scale
011	C	A.J. Elliott	R 3177	1989	8	17	2	20	19.68	DD G 0 1	0.03	-0.73	328.23	-4.47	1.04	345.92	345.90	0.34	1.051
012	C	A.J. Elliott	R 3177	1989	8	17	2	21	21.52	RD G 0 1	-0.45	-0.57	326.43	-4.47	1.04	344.12	344.11	0.49	1.051
013	C	A.J. Elliott	R 3177	1989	8	17	2	22	9.08	DD G 0 1	0.00	-0.61	325.05	-4.47	1.03	342.74	342.74	0.60	1.051
014	C	A.J. Elliott	R 3177	1989	8	17	2	22	10.56	RD G 0 1	-0.01	-0.58	325.01	-4.47	1.03	342.70	342.69	0.60	1.051



## Andrew's submitted timings

ref	Tel	Observer	Star No.	y	m	d	h	m	s	PhGrMrCeDb	O-C	limb	PA	l	b	AA	P	D	scale
011	C	A.J. Elliott	R 3177	1989	8	17	2	20	19.68	DD G 0 1	0.03	-0.73	328.23	-4.47	1.04	345.92	345.90	0.34	1.051
012	C	A.J. Elliott	R 3177	1989	8	17	2	21	21.52	RD G 0 1	-0.45	-0.57	326.43	-4.47	1.04	344.12	344.11	0.49	1.051
013	C	A.J. Elliott	R 3177	1989	8	17	2	22	9.08	DD G 0 1	0.00	-0.61	325.05	-4.47	1.03	342.74	342.74	0.60	1.051
014	C	A.J. Elliott	R 3177	1989	8	17	2	22	10.56	RD G 0 1	-0.01	-0.58	325.01	-4.47	1.03	342.70	342.69	0.60	1.051

Our eclipse graze. - Wind shake 22/8/89

Clock

Star + eclipsed moon before graze

D 02:20:19

R 02:21:41

D 02:22:09

R 02:22:10

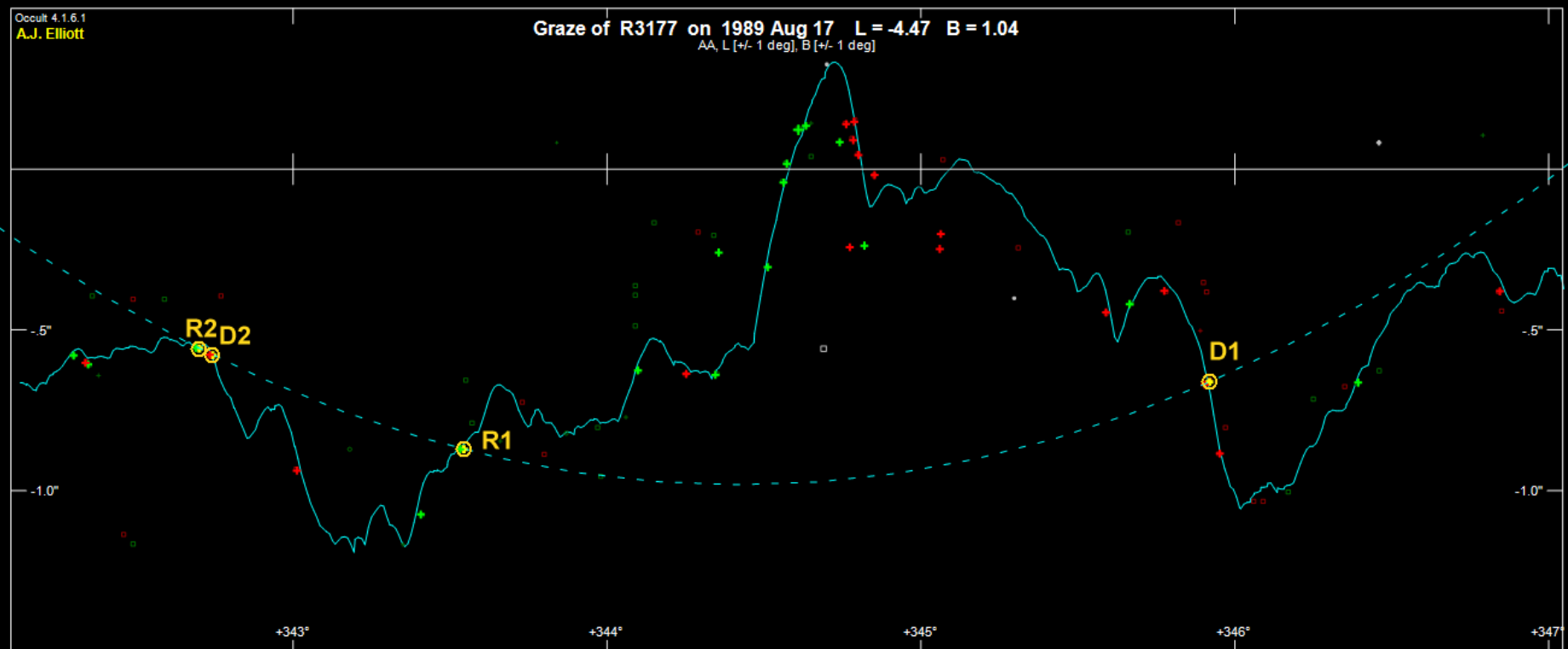
+ telescope Champagne, celebrants, eclipsed moon + star thro' intensifier

44 Capricorni 6.0 mag.

- Rare event - bright star / total eclipse

Southern limit expedition to Egypt  
(unsuccessful).

# Lunar limb profile – Andrew's timings - corrected



ref	Tel	Observer	Star No.	y	m	d	h	m	s	PhGrMrCeDb	O-C	limb	PA	l	b	AA	P	D	scale
011	C	A.J. Elliott	R 3177	1989	8	17	2	20	19.68	DD G 0 1	0.03	-0.73	328.23	-4.47	1.04	345.92	345.90	0.34	1.051
012	C	A.J. Elliott	R 3177	1989	8	17	2	21	41.52	RD G 1	-0.02	-0.90	325.85	-4.47	1.04	343.54	343.54	0.53	1.051
013	C	A.J. Elliott	R 3177	1989	8	17	2	22	9.08	DD G 0 1	0.00	-0.61	325.05	-4.47	1.03	342.74	342.74	0.60	1.051
014	C	A.J. Elliott	R 3177	1989	8	17	2	22	10.56	RD G 0 1	-0.01	-0.58	325.01	-4.47	1.03	342.70	342.69	0.60	1.051

## **Andrew's timings – video frame - R1 at 02:21:41.52**

89-08-17 THU  
02:21:41

**Was an incorrect time submitted by Andrew?**

**Was an incorrect time input to the occultations archive?**

**Mitsuru Soma – update the graze dataset**

**Dave Herald – update the occultations archive**



## Andrew's video

89-08-17 THU  
02:06:11



## **In summary...**

- **Without Tim's 2015 observations we would not have corrected the error from 1989**



- 
- **Check your reported timings in the Euraster and Occult databases**
- **Retain your original recordings and log books**
- **How can we preserve recordings? Online? High quality tape? CD? DVD?**