26 POSITIVE OBSERVATIONS OF 21 EVENTS DURING 17 MONTHS

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IOTA/ES, Czech astronomical society
ESOP XXXVIII, Paris Observatory, 2019 September 1st

28 POSITIVE OBSERVATIONS OF 23 EVENTS DURING 22 MONTHS

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ESOP XXXVIII, Paris Observatory, 2019 September 1st

28 PAIRS OF MOMENTS OF OCCULTATIONS („D“ AND „R“) 26 POSITIVE STATIONS (OBSERVATIONS) OF 23 EVENTS DURING LAST 22 MONTHS

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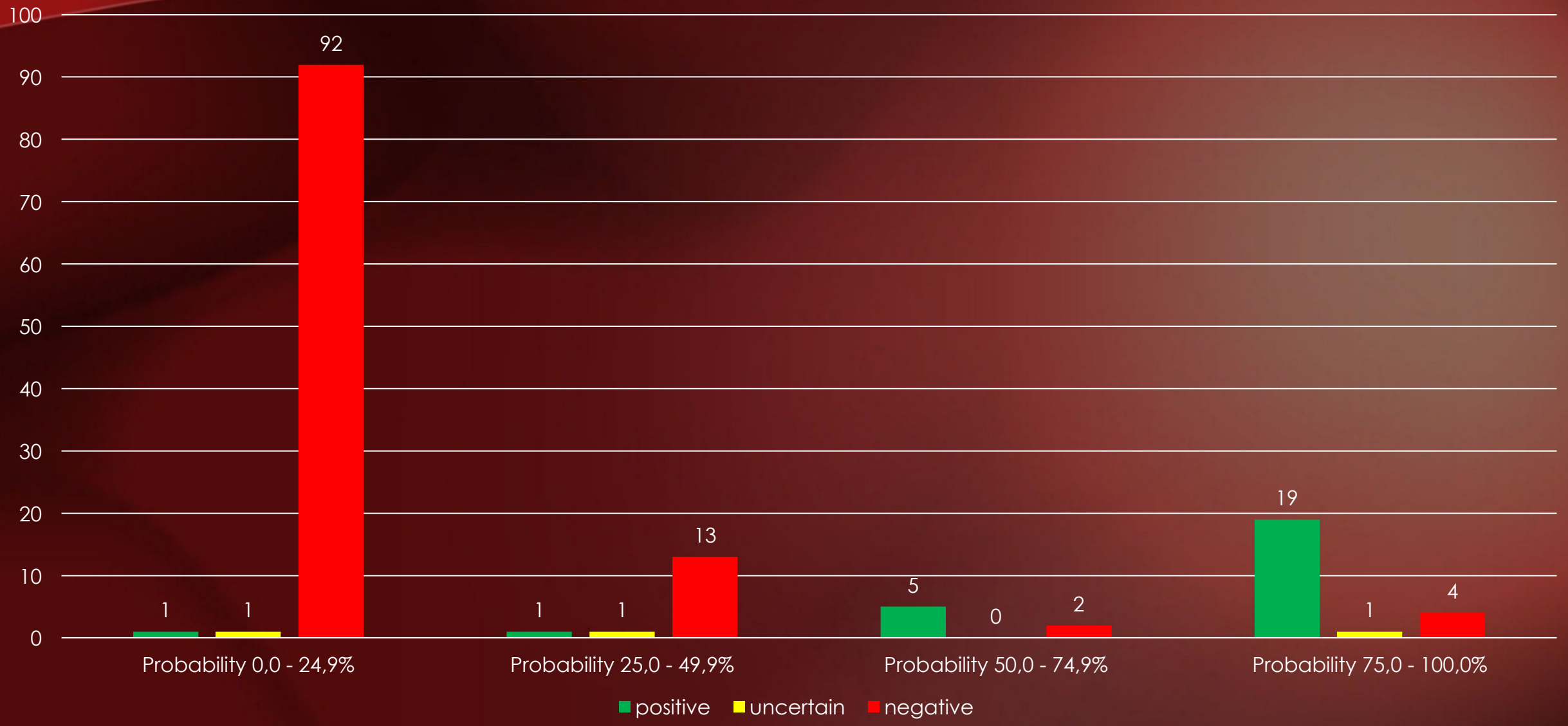
ESOP XXXVIII, Paris Observatory, 2019 September 1st

SUCCESS DEPENDING ON PROBABILITY (140 OBSERVATIONS)



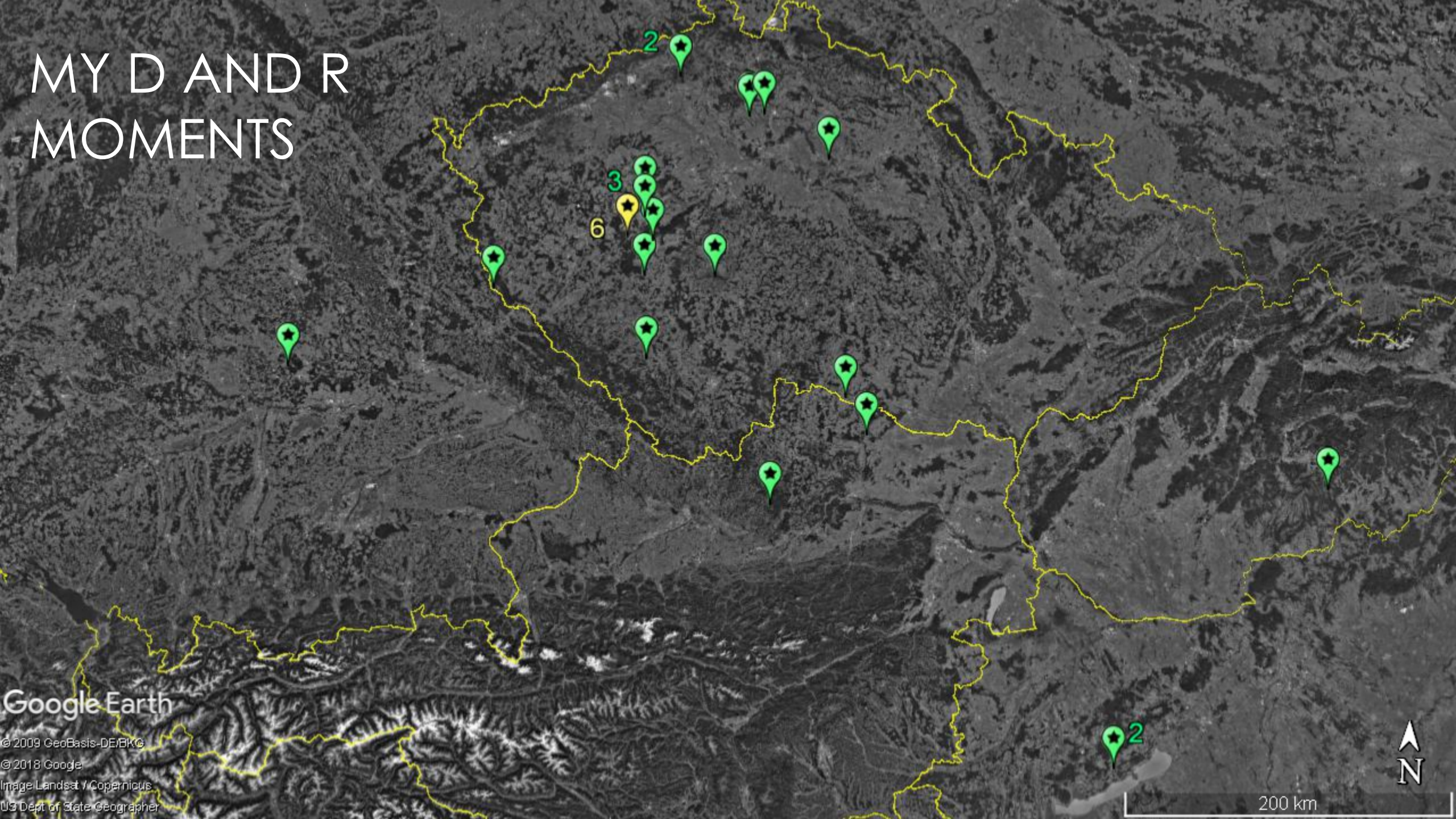
FOCUS ON THE EVENTS WITH HIGHER PROBABILITY

- Travelling for the phenomenas with good prediction of the path where my home station lies outside the path
- When it is bad weather forecast for home station it is good to move in the path
- Set more than 1 station (usually 2 stations)
  - Ideally 1 station home, the second mobile
  - Possible both mobile stations (with battery source)

MY RULES OF SELECTION

- 15 % or more probability if the event is in the first half of the night
- 30 % or more probability if the event is in the second half of the night
- Travelling for the occultations with probabilities 50 % (better 60 %) or more to places to 200 (or 300) km of distance from home

MY D AND R MOMENTS



THANKS TO MICHAL ROTTENBORN AND OBSERVATORY ROKYCANY!!

N 203/810 mm, Watec 120N+ and S-C 150/1500 mm, Watec 120N

JOURNEYS FOR OCCULTATIONS

- A total of 36 trips with a total distance travelled 12956 km (average 360 km)
- 17 of them were successful – positive (with 20 positive stations and 22 pairs of moments)
- 1 I turned home due clouds (but with positive result)
- 7 were cloudy
- 5 were with only negative results
- 2 uncertain
- 2 too bright sky (twilight)
- 1 I did not found the field
- 1 is not still analyzed

REASONS OF TRAVELLING

- 26 trips to path (home station was out of path)
- 10 trips in path:
  - 5 x (home station was in path, but it was bad weather)
  - 3 x better altitude of star above the horizon
  - 2 x another chords (other observer was on the same line)

MY POSITIVE OCCULTATION (DEC 2017 – MAY 2018)

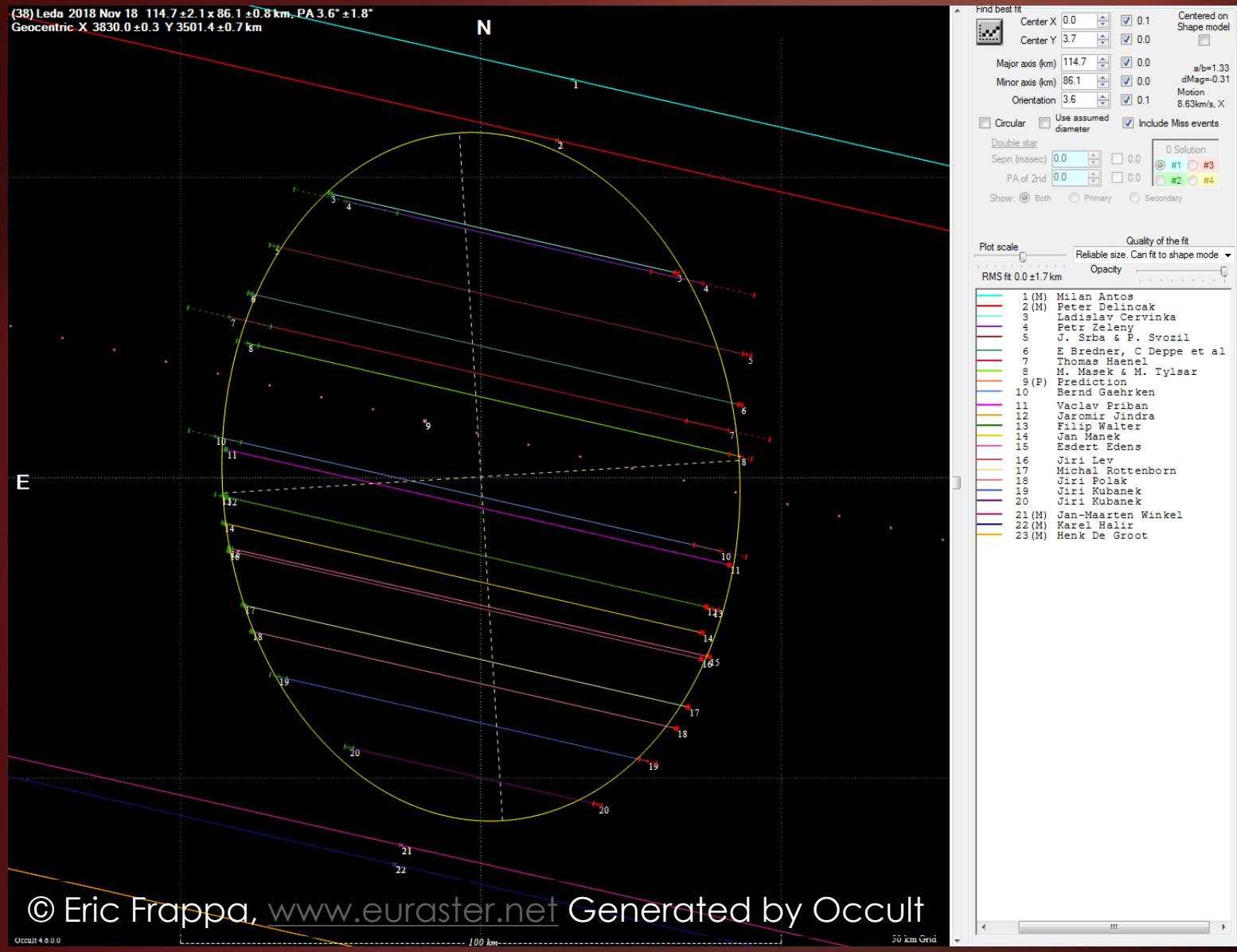
date	minor planet	sum mag	probability	Location	note
11 Dec 2017	Isolda	10,9	100 %	home	
13 Feb 2018	Brixia	11,6	93 %	N Bohemia	
21 Feb 2018	Katja	11,1	58 %	N Bohemia	
23 Feb 2018	Antigone	9,9	94 %	C Bohemia	
10 Apr 2018	Euphrosyne	11,5	72 %	home	
19 Apr 2018	Amphitrite	10,3	94 %	Slovakia	
21 Apr 2018	Hera	11,3	94 %	S Bohemia	
29 May 2018	Asterope	11,1	92 %	W Bohemia	

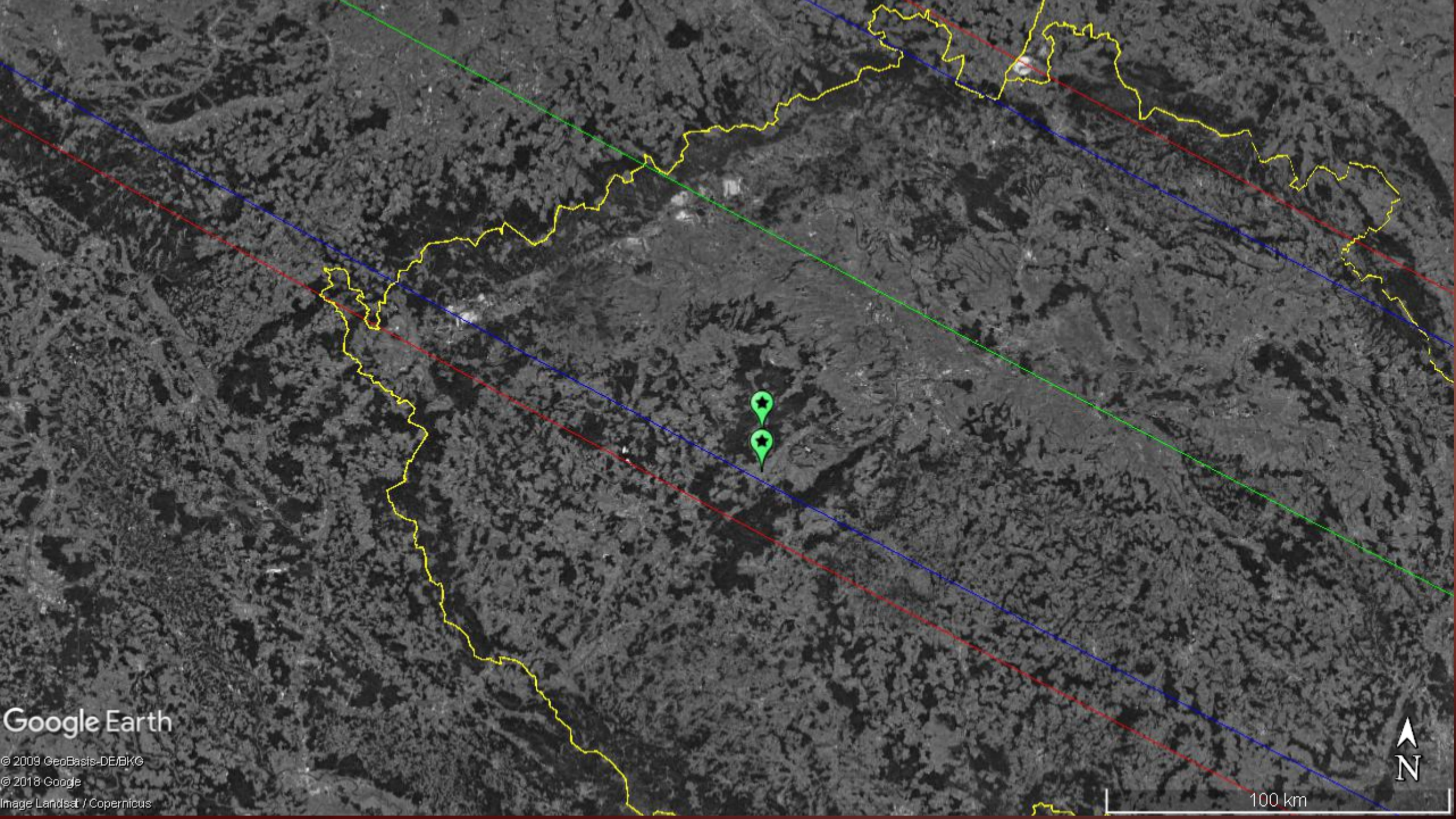
MY POSITIVE OCCULTATION (JUL 2018 – DEC 2018)

date	minor planet	sum mag	probability	location	note
26 Jul 2018	Hedwig	11,8	100 %	Hungary	ds
6 Aug 2018	Sapientia	13,2	78 %	home	
18 Aug 2018	Gotho	11,5	56 %	Moravia	
20 Sep 2018	Ekard	11,1	97 %	Bavaria	
10 Oct 2018	Pauly	13,5	28 %	home	
18 Nov 2018	Leda	10,1	57 – 82 %	C Bohemia	2 st.
5 Dec 2018	Leda	10,8	100 %	Lower Austria	
18 Dec 2018	Ino	10,8	97 %	Lower Austria	

THE 2ND MOST SUCCESSFULL EVENT IN EUROPE IN 2018
LEDA 18 NOVEMBER

Kublov 7,13 s
Tlustice 4,8 s (automatic)

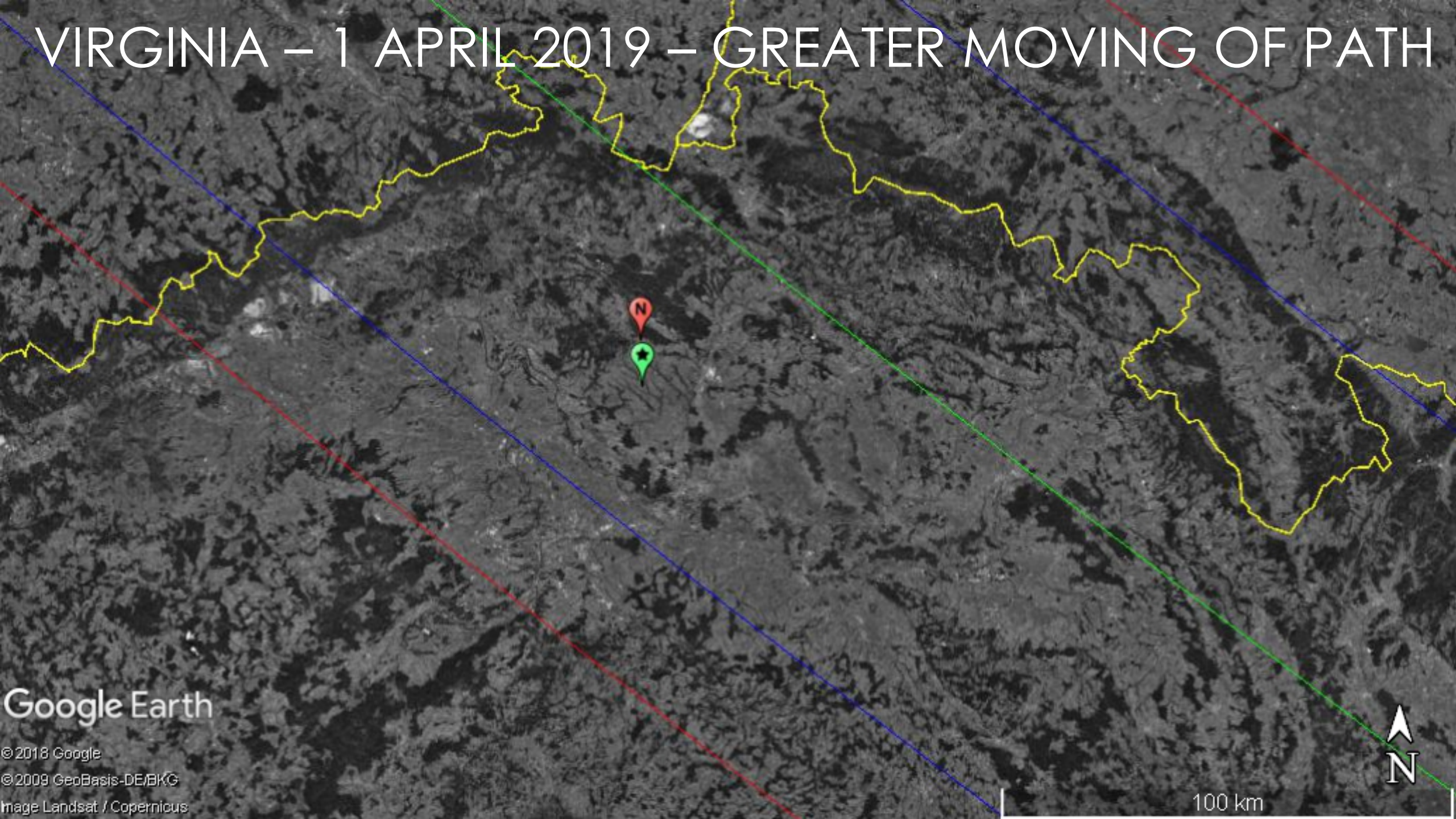


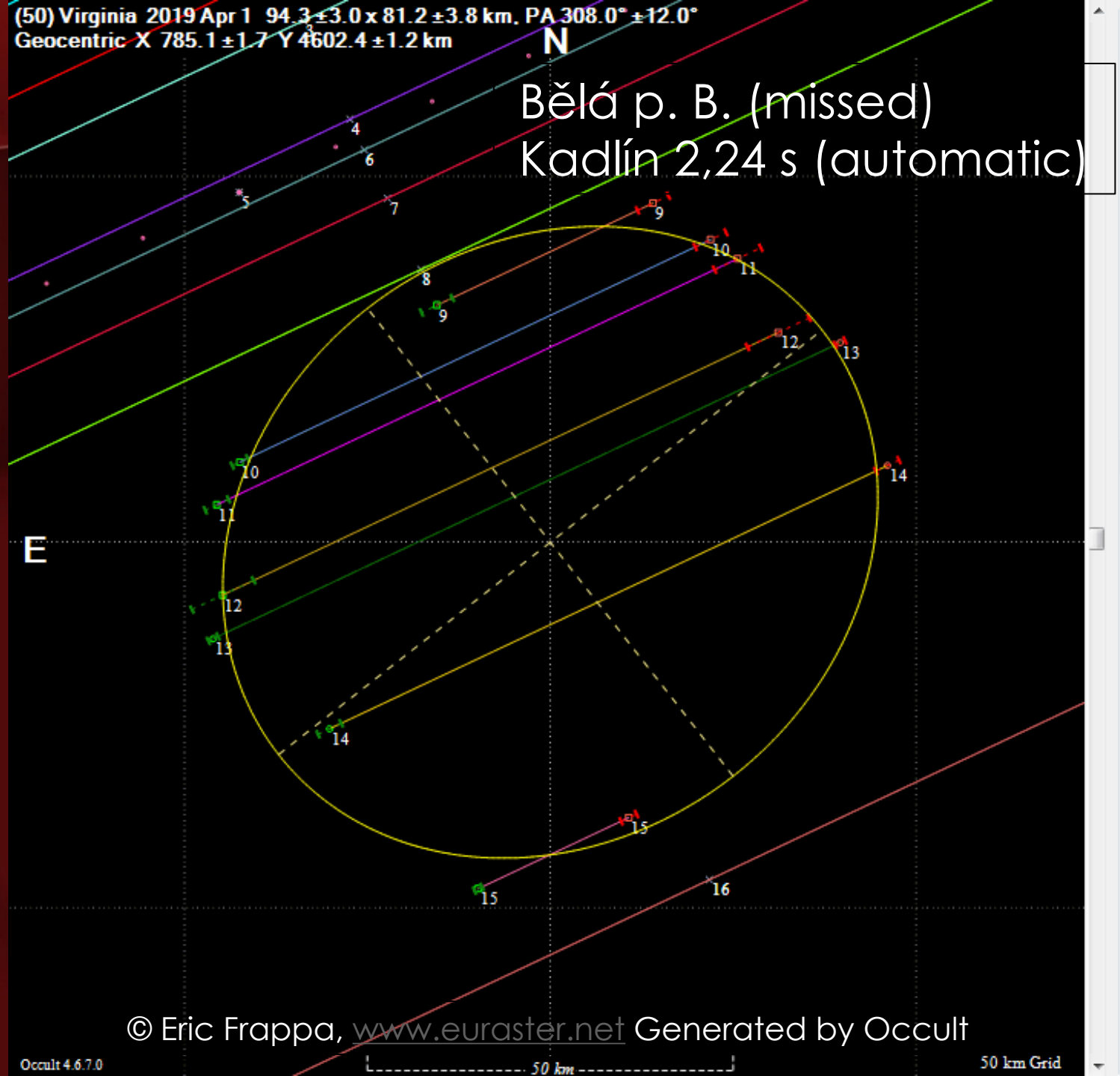

Google Earth
© 2009 GeoBasis-DE/BKG
© 2018 Google
Image Landsat / Copernicus
N
100 km

MY POSITIVE OCCULTATION (JAN 2019 – AUG 2019)

date	minor planet	sum mag	probability	location	note
29 Jan 2019	Union	13,1	21 %	home	
12 Feb 2019	Chicago	11,7	100 %	C Bohemia	
17 Feb 2019	Adelheid	11,8	79 – 86 %	C Bohemia	2 st.
1 Apr 2019	Virginia	12,5	84 %	C Bohemia	
22 Apr 2019	Adeona	11,9	75 – 84 %	C Bohemia	ds, 2 st.
1 Jun 2019	Galatea	12,4	67 %	home	
14 Aug 2019	Erigone	11,6	100 %	C Bohemia	

VIRGINIA – 1 APRIL 2019 – GREATER MOVING OF PATH





Find best fit

Center X	0.0	0.1	Centered on Shape model
Center Y	0.5	0.0	
Major axis (km)	94.3	0.0	a/b=1.16
Minor axis (km)	81.2	0.0	dMag=-0.16
Orientation	308.0	0.0	Motion 13.19km/s, X

Circular | Use assumed diameter | Include Miss events

Double star

Sepn (masec)	0.0	0.0
PA of 2nd	0.0	0.0

0 solutions: #1 #3 #2 #4

Show: Both | Primary | Secondary

Plot scale

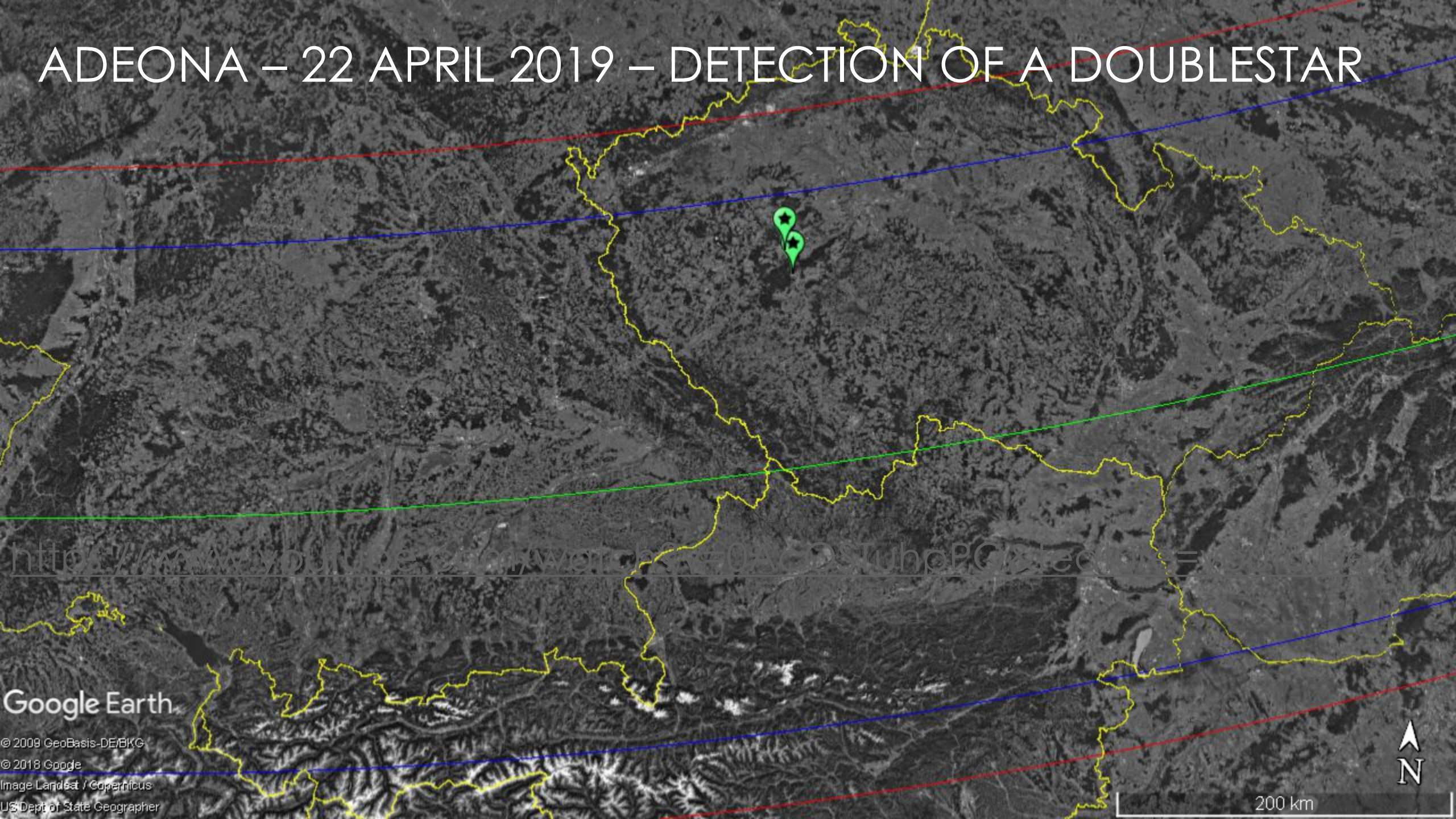
Quality of the fit: Reliable size. Can fit to shape mode

RMS fit -0.2 ±3.2 km

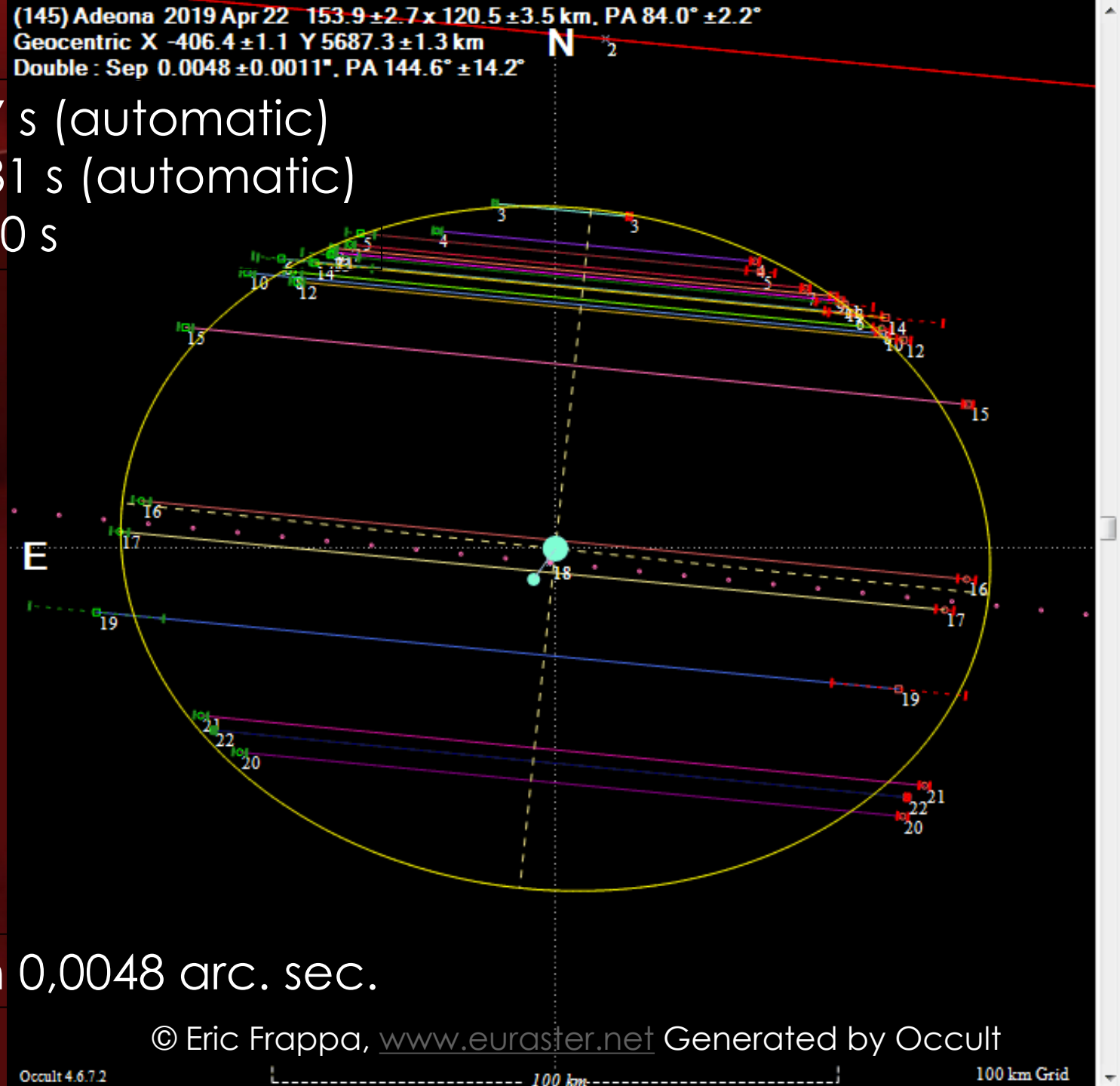
Opacity

1	(M)	Peter Delincak
2	(M)	Peter Lindner
3	(M)	Petr Zeleny
4	(M)	Martin Masek
5	(P)	Prediction
6	(M)	Eberhard Bredner
7	(M)	M. Masek & M. Tylsar
8	(M)	Jiri Kubanek
9		Jiri Kubanek
10		Michal Rottenborn
11		Tomas Janik
12		Vaclav Priban
13		Jan Manek
14		Stefan Gajdos
15		Karel Halir
16	(M)	Jiri Polak

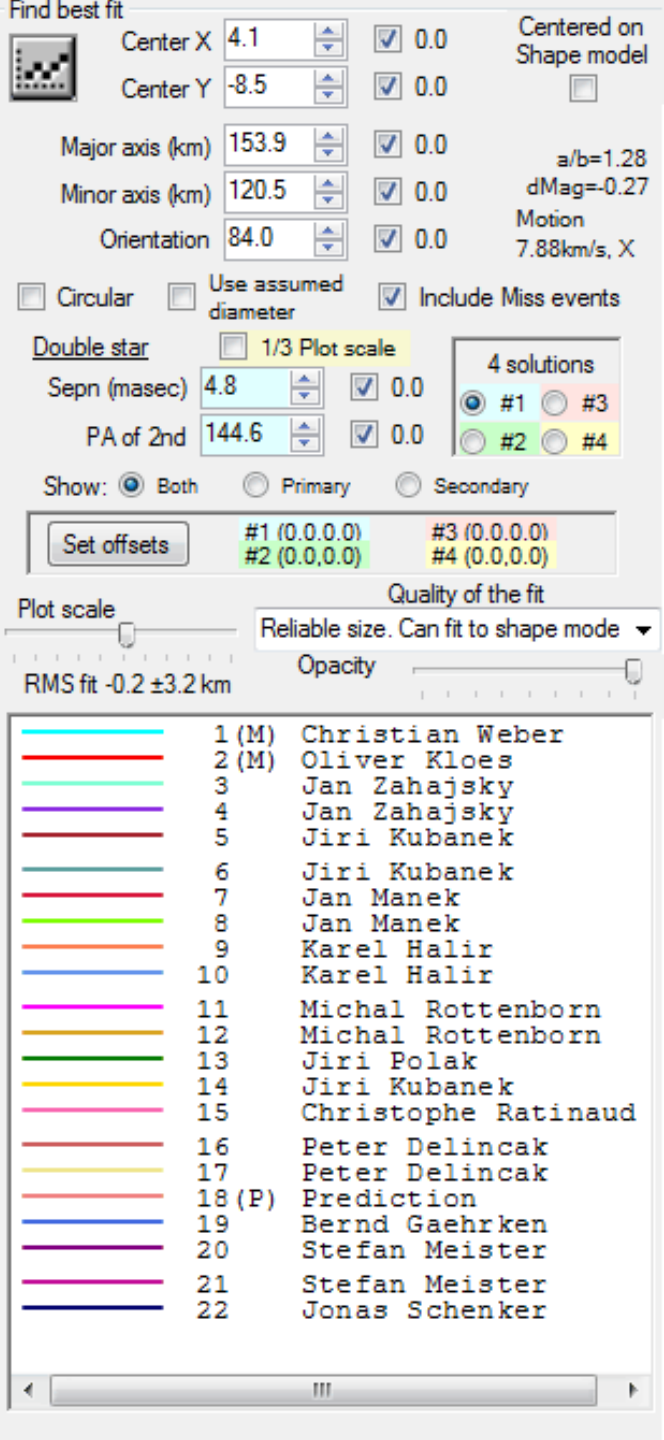
ADEONA – 22 APRIL 2019 – DETECTION OF A DOUBLESTAR



Tlustice 8,97 s (automatic)
Tlustice 12,81 s (automatic)
Drahlín 12,80 s



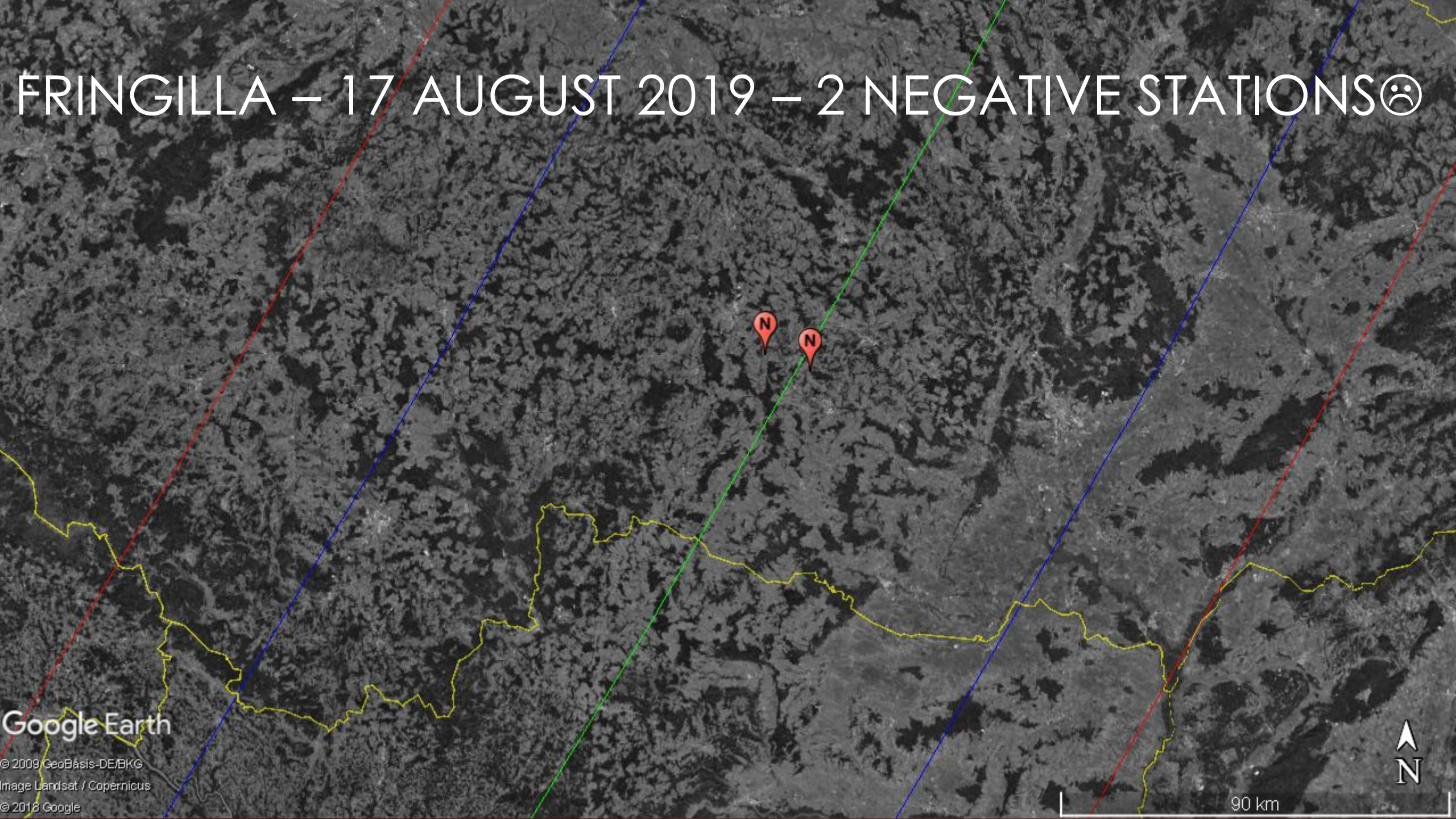
Separation 0,0048 arc. sec.



MY MULTIPLE STATIONS OBSERVATIONS

date	minor planet	location	result	probability	note
18 Nov 2018	Leda	Tlustice	POSITIVE	57 %	A
		Kublov	POSITIVE	82 %	
17 Feb 2019	Adelheid	Boreč	POSITIVE	79 %	A
		Vinec	POSITIVE	86 %	
1 Apr 2019	Virginia	Kadlín	POSITIVE	84 %	A
		Bělá p. B.	negative	90 %	
22 Apr 2019	Adeona	Tlustice	POSITIVE	75 %	A, ds
		Drahlín	POSITIVE	84 %	
17 Aug 2019	Fringilla	Brtnice	negative	96 %	A
		Čechtín	negative	95 %	

FRINGILLA – 17 AUGUST 2019 – 2 NEGATIVE STATIONS☹



FOCUS ON THE EVENTS WITH HIGHER PROBABILITY

- Travelling for the phenomenas with good prediction of the path
- Moving if I it is bad weather forecast for home station
- Moving for better condition (altitude of star, darker sky)
- Moving due collision lines with other observatory
- Set more than 1 station (usually 2 stations).
  - Ideally 1 station home, the second mobile
  - Possible both mobile stations (with battery source)

WHICH ONE IS BETTER?

- Both events with 7 positive chords and two negatives

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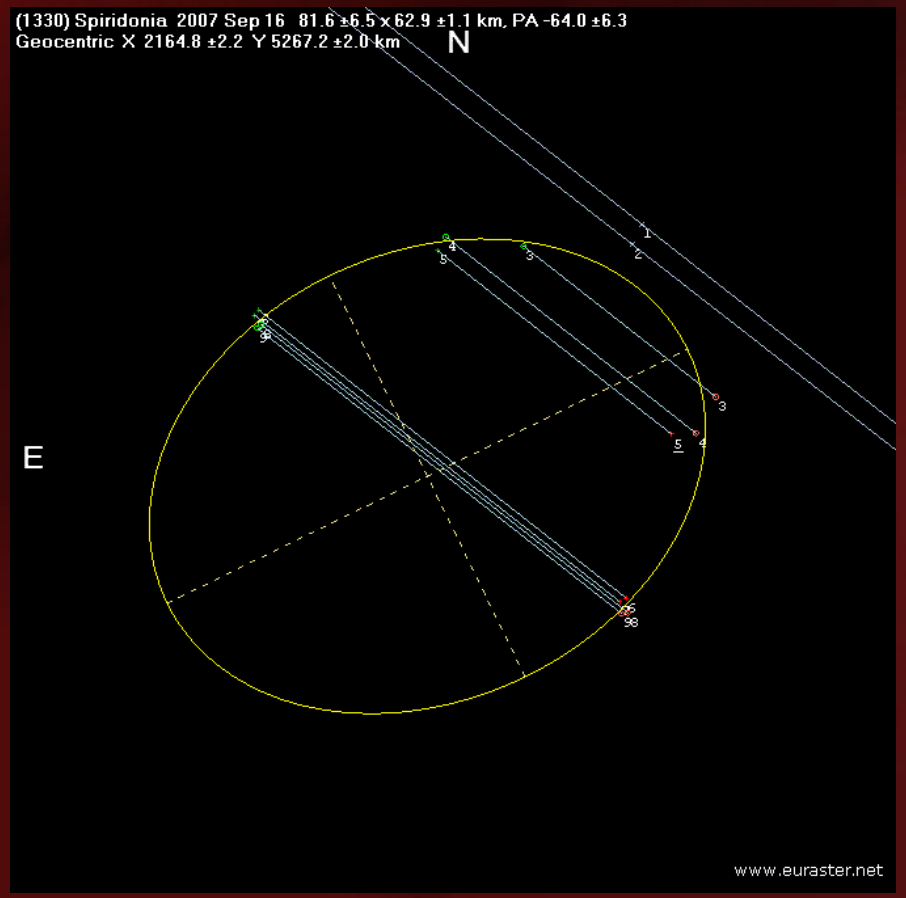

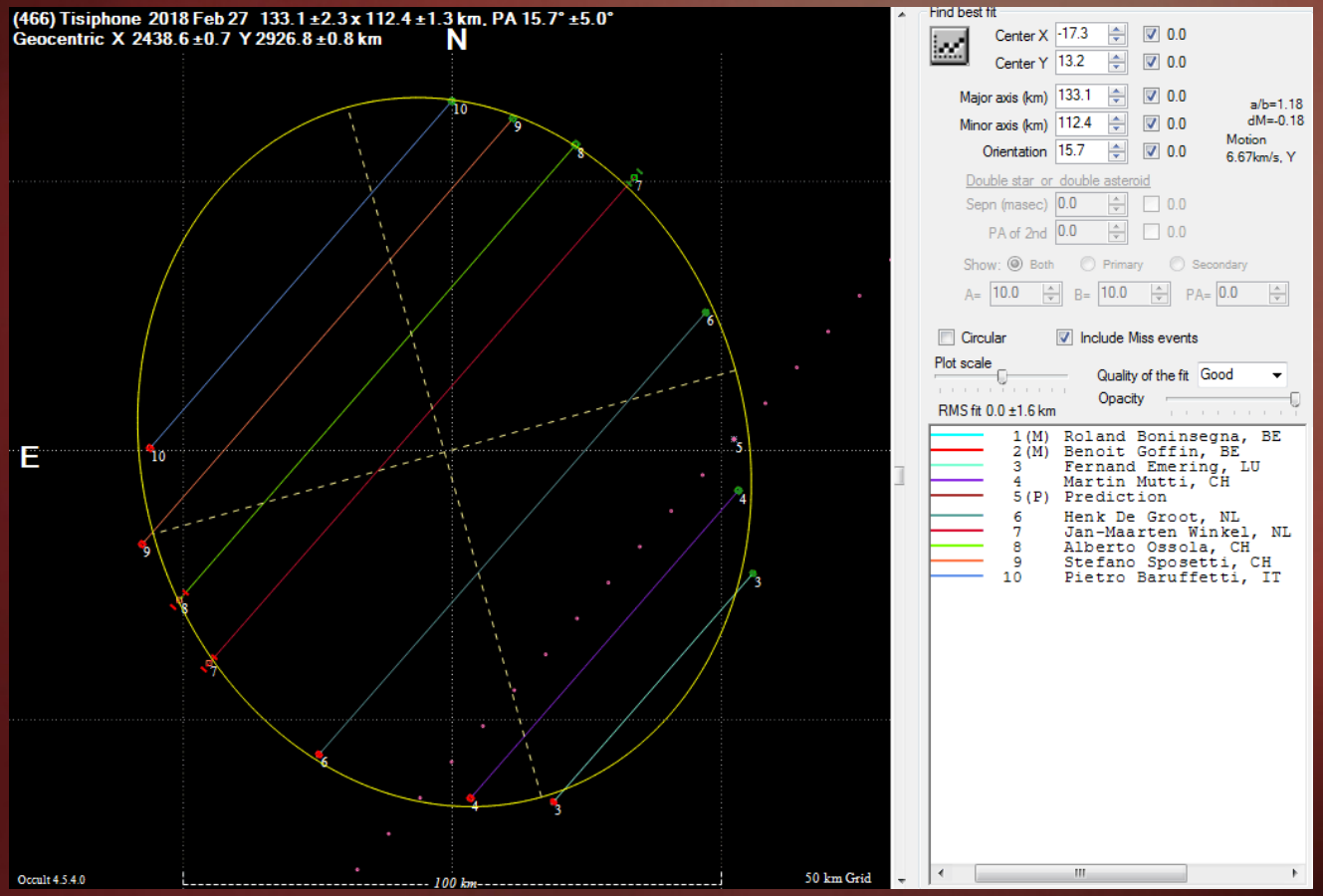

WHEN WILL WE CAN TO CHOOSE PLACES FOR OBSERVATIONS GRAZE OCCULTATIONS BY MINOR PLANETS?

Merci