

Historical occultation phenomena observed from the Greater Poland region

Marek Zawilski
PTMA Lodz, SOPiZ



*Rey

*SAm

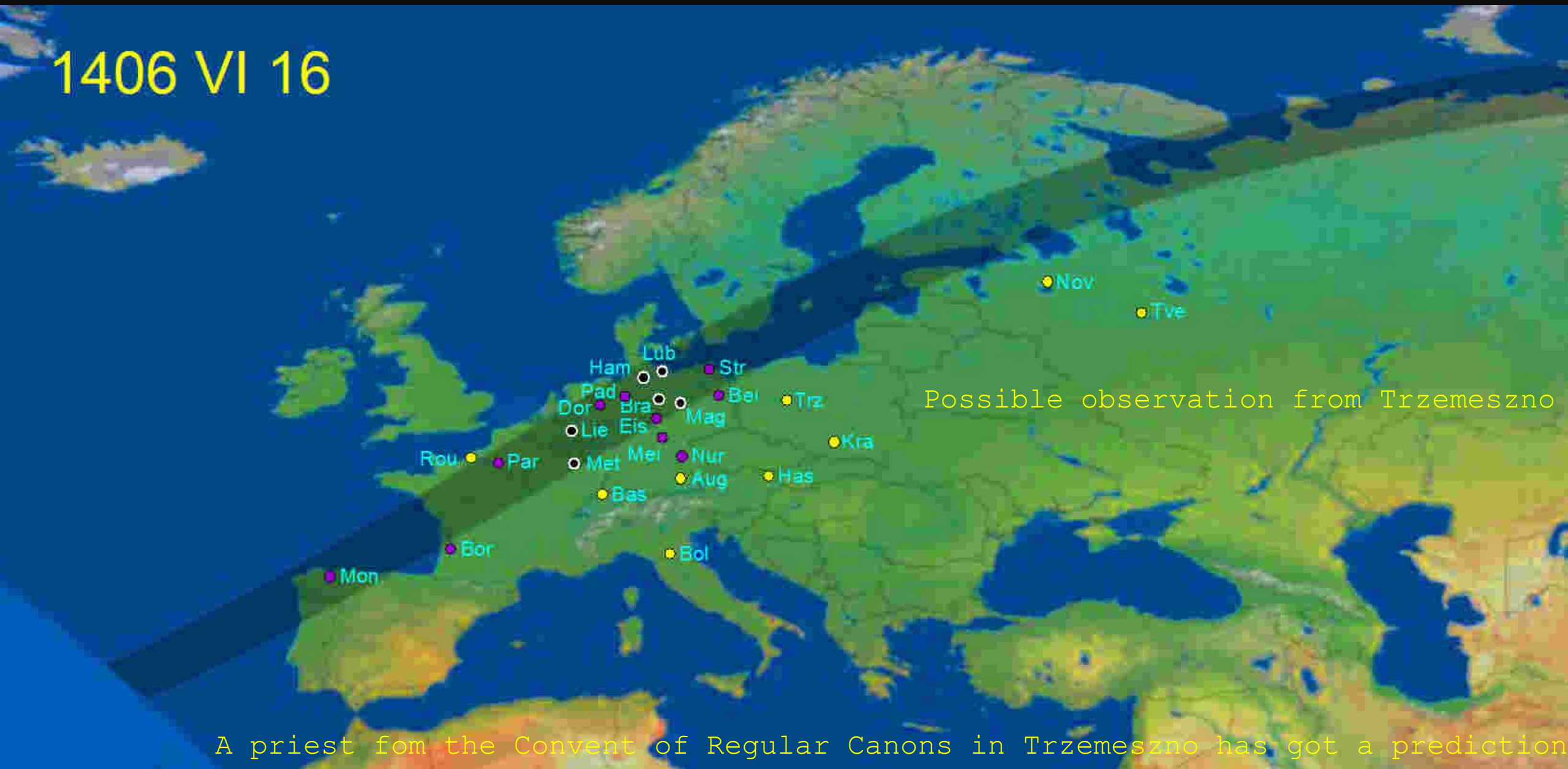
*Ful

Bez*

No historical data from Greater E

878 X 29

1406 VI 16



1415 VI 7



An observation from Trzemeszno/Stodoły

The same priest was celebrating a morning mass and was surprised and scared during

1424 VI 26

in uasit Ruesh ano
dm 1424 die 26
Iohannis et pauli
martirum fuit eclipsis
solis iam vergente
circa ad occasum et
tpe modico perdurat

Rursus anno domini 1424 die
beatorum Iohannis et Pauli
martirum fuit eclipsis solis,
sole iam vergente circiter ad
occasum, ut tempore modico
perduravit.

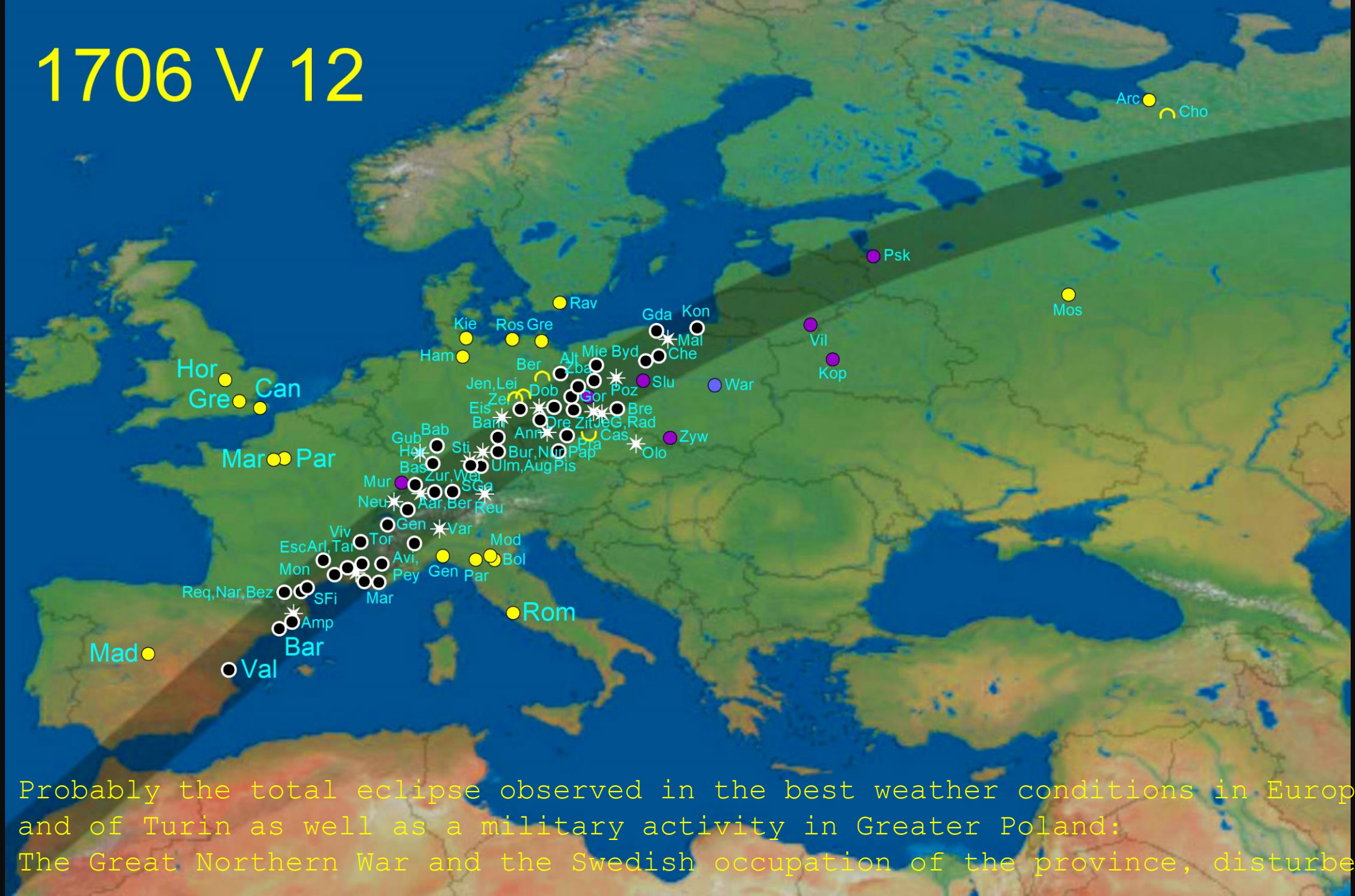
Chronicle of Regular Canons of

Andres

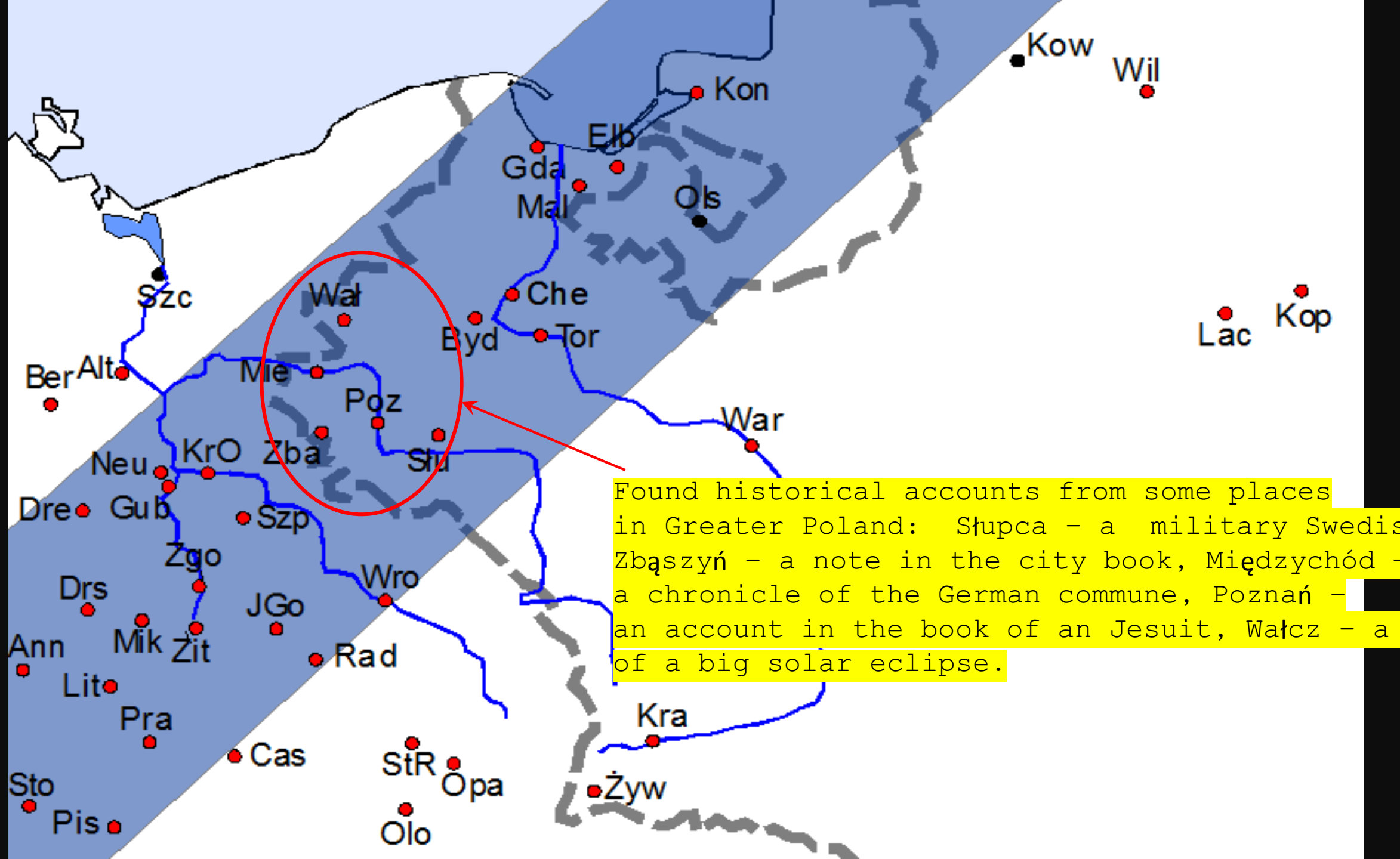
Again, the same priest was the only eye-witness of the eclipse inside the path of tota

Trz

1706 V 12



Probably the total eclipse observed in the best weather conditions in Europe; a si
and of Turin as well as a military activity in Greater Poland:
The Great Northern War and the Swedish occupation of the province, disturbed life



1706 D 12. Maia było Wielkie Zaciemienie upoludnie tak dalece że ciemność
była iako w nocy y widziane były gwiazdy w tym Mieysku gdzie miało być Słońce.
Gdzie ztego Zaciemienia połym nastalo powietrze gwałtowne

1706. On the day of 12 of May there was a big eclipse at midday so that the darkness was like at night and stars were seen in that place where the Sun should be - and from that eclipse then the stormy air ensued.

The entry by Marcin Dorażalski, the city scribe of Zbąszyń.

Den 12. May 1706. war eine so erschreckliche finsterniß an der
Sonnen, daß man bey Menschengedenken dergleichen
nicht gesehen; Man kunte die Sterne am Himmel erblicken,
publicken, und war nicht anders als wie zur
nachtzeit. Es wäret diese Totalfinsterniß fast
zwo minuten. Hoc anno sind auch sonst sehr
viel ostenta und prodigia coeli bey uns gesehen
worden. Gott wende alles unglück ab.

Den 12. May 1706 war eine so erschreckliche finsterniß an der Sonnen, daß man bey Menschengedenken dergleichen nicht gesehen. Man kunte die Sterne am Himmel erblicken, und war nicht anders als wie zur nachtzeit. Es wärete diese Totalfinsterniß fast zwo Minuten. Hoc anno (*in diesem Jahre*) sind auch sonst sehr viel ostenta und prodigia coeli (*Zeichen und Wunder am Himmel*) bey uns gesehen worden. Gott wende alles unglück ab.

HISTORIA
NATURALIS
CURIOSA
REGNI POLONIÆ,
MAGNIDUCATUSLITVANIÆ,
ANNEXARUMq; PROVINCIARUM,
IN
TRACTATUS XX
DIVISA:

Ex

Scriptoribus probatis, servata primigenia eorum
phrasi in locis plurimis, ex M. S. S. variis, Testi-
bus oculatis, relationibus fide dignis, experimentis,

DESUMPTA

Operâ

P. GABRIELIS RZACZYNSKI Soc. JESU.

SANDOMIRIÆ.

Typis Collegii Soc. JESU. Anno 1721.

SECTIO III.
De
ECLIPSIBUS SOLIS.

SOL quodd sit flamma, præter alios *Scheiner S. J. in Rosa Ursina* probat multis auctoritatibus & argumentis. Pro pabulo seu materia, quâ conservatur, copia vaporum ascendentium à *Bourdin* assignatur atq; probatur. Idem Sol auctori præfato oblongus est, qui

mines multi in Majori Polonia turbatas naturæ leges inclamarent. Et
an. 1706. Maji 12. grandis solis defectus exhibitus ab hora media de-
cima, ad duodecimam. Lucem tenebræ tunc eripuerant, ideoq; obje-
rant stellas aspectui. Simile, imò latius velum opacitas lunæ in so-
lem isce-

Professor of the Jesuit College in Pozna

on of the deep partial solar eclipse on April 1, 1764 by Józef Rogaliński, SJ, a

Ephemerides astronomicae anni 1765 ad meridianum
vindobonensem

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*Observatio Eclipsis Solis die 31. Martii Anno 1764. facta in
collegio Posnaniensi S. J. in Polonia, a R. P. Roga-
linsky e S. J. & Socio R. M. Sionest S. J.
ex Schediasmate typis dato.*

Ad hanc observationem duplici usi sumus instrumen-
to, tubo scilicet catadioptrico Gregoriano 32. pol. pro de-
terminandis momentis initii & finis & tubo dioptrico 3½
ped. machinæ parallaxicæ applicato suoque micrometro
instructo pro determinandis phasibus.

Valore partium micrometri methodo duplici determi-
nato invenimus unam revolutionis ejus partem centesi-
mam æqualem circuli cœlestis 1'', 9''', 24'''. atque adeo
revolutionem integram = 1', 55'', 40'''.

Cum autem ab aliquot diebus maculæ in disco Solis
nullæ comparerent, initium Eclipsæ ex immediata par-
tis disci obscurandæ consideratione determinare debui-
mus, quod quidem in tubo dioptrico satis feliciter suc-
cessit.



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Tempus ve- rum. h. m. d.	Partes cen- tes. disci il- lum. ☉	digiti illumi- nati. h. m. d.	digiti obscu- rari d. m. d.	Tempus vs- rum h. m. d.	dig. Ecc. obscu- rum ad int. & dim. red. d. m.
Immerfiones Initium observatum tubo dioptrico.				Immerfiones In parte disci occidentali.	
22 34 14				22 37 58	0 30
37 35	1611	11 33 3	0 26 7	41 13	1 0
40 10	1561	11 11 8	0 48 2	44 43	1 30
42 5	1511	10 50 3	1 9 7	49 40	2 0
44 52	1461	10 28 8	1 31 2	53 38	2 30
50 16	1361	9 51 5	2 3 5	57 5	3 0
52 6	1336	9 45 8	2 14 2	23 1 9	3 30
55 15	1261	9 13 5	2 46 5	5 9	4 0
58 11	1211	8 52 0	3 8 0	9 2	4 30
23 3 59	1111	8 9 0	3 51 0	12 56	5 0
15 9	911	6 43 0	5 17 0	17 5	5 30
21 34	811	6 0 0	6 0 0	21 34	6 0
33 0	611	4 34 0	7 26 0	25 33	6 30
45 11	386	2 57 2	9 2 8	29 19	7 0
50 14	300	2 6 1	9 53 9	33 30	7 30
Post hanc observatam phasim adhuc crece- bat Eclipsis, sed hospitum supervenientium copia prohibuit, ne certo observaretur illud incrementum.				37 16	8 0
				41 3	8 30
				44 49	9 0
				74 52	9 30

Emerfiones				Emerfiones.	
0 21 3	386	2 57 2	9 2 8	0 21 24	9 0
33 24	611	4 34 0	7 26 0	25 14	8 30
44 50	811	6 0 0	6 0 0	29 3	8 0
51 17	911	6 43 0	5 17 0	32 53	7 30
1 2 59	1111	8 9 0	3 51 0	36 51	7 0
8 46	1211	8 52 0	3 8 0	40 50	6 30
11 40	1361	9 13 5	2 46 5	44 50	6 0
14 49	1336	9 45 8	2 14 2	49 10	5 30
16 31	1361	9 56 5	2 3 5	53 35	5 0
21 56	1461	10 28 8	1 31 2	57 40	4 30

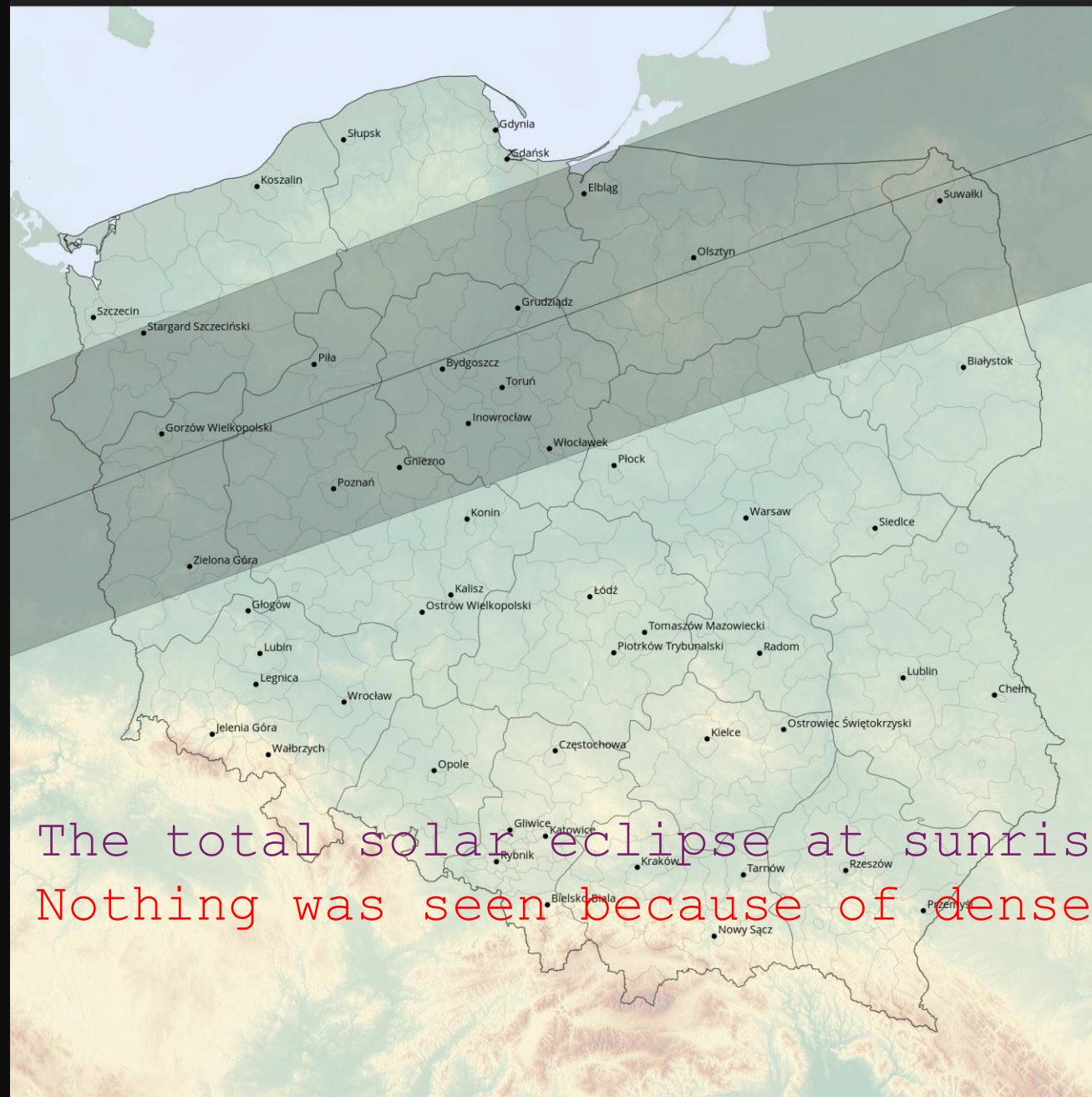


1728–18022

!!!
Some guests
came and
disturbed
the
observa-
tions around
the maximum
phase of

Numerous data on historical solar eclipse
observations
in Europe and the Middle East
you will find at:

www.solareclipses.pl



The total solar eclipse at sunrise 1887 Aug 19
Nothing was seen because of dense clouds.



The
Poznań
Observato
ry around
1920



Stanisław Andruszewski (1900-1971)



Bohdan Zaleski (1887-1927)
The director.



First observers of occulta

Jerzy Sławski (1902-1953)



Occultation of Aldebaran on March 23, 1923 observed at the Pozna



Stanisław Andruszewski



Kazimierz Kordylewski

Observations d'Occultations faites à l'Observatoire de Poznan (Posen), Pologne

par le Dr. B. ZALESKI

Dates	Phénomènes	Instruments	Latitude	Longitude	T. M. civil de Greenwich	Obs.	Remarques
23 Mars 1923							
α Tauri	Im.	E	+ 52° 23' 48,9	— 147° 30,4	15 53 51,27	A	Très sûre.
»	Im.	M	47,9	30,3	15 53 51,03	K	»
»	Em.	E	48,9	30,4	16 33 39,89	A	»
»	Em.	M	47,9	30,3	16 33 40,07	K	»
27 Mai 1923							
96 Virginis	Im.	M	47,9	30,4	19 40 28,16	A	Bonne obs.
α Virginis	Im.	M	47,9	30,4	21 27 23,76	A	Bonne obs.
27 Octobre 1923							
71 Tauri	Em.	M	51,30	30,7	18 42 53,66	K	± 0,8 ^{se}
θ ₁ Tauri	Im.	M	51,30	30,7	19 2 11,96	K	Incertaine.
θ ₁ Tauri	Em.	G	51,30	30,7	20 1 37,04	A	Très bonne.

— 15 —

© Observatoire de Marseille • Provided by the NASA Astrophysics Data System

Le temps est le temps moyen civil de Greenwich.

Les éphémérides ont été publiées dans l'Annuaire de l'Observatoire de Cracovie.

La correction de l'horloge Strasser et des chronomètres a été déterminée à l'aide des signaux rythmiques de Paris. Les temps du premier et du dernier signal ont été admis conformes au télégramme qui suit les signaux. (h = 85 mètres ; pour l'équatorial Steinheil 95 mètres).

Observateurs : A = Androushevski, K = Kordylevski, B = Burdecki, S = Slavski, Kor = Korlovski.

Instruments : M = Merz 95^{mm}, E = Ertel 81^{mm}, St = Steinheil 160^{mm}, II, G = Théodolite 20^{mm}.

ACTA ASTRONOMICA

Ser. b. Vol. I. Pg. 1-8.

1925 Décembre 3.

Observations d'occultations faites à l'Observatoire de l'Université de Poznań.

Par St. Andruszewski et J. Sławski
(communiquées par le Dr. B. Zaleski, directeur de l'Observatoire).

Dates	Etoiles	Phénom.	Temps Universel	Instrum.	Obser- vateur	Remarques
1924						
Janvier 23	18 Leonis	E. o.	^h ^m ^s 18 22 48.85	M	K	Peu sûre
Février 16	74 B. Gemin.	I. o.	17 17 14.99	St	K	Bonne
" 20	18 Leonis	I. o.	3 46 3.30	St	A	"
Mars 13	130 Tauri	I. o.	23 52 2.01	M	A	"
Avril 8	275 B Tauri	I. o.	19 30 38.74	R	K	"
" 15	49 Leonis	I. o.	39.09	M	S	"
" "	"	"	20 31 35.47	M	Koz	"
" "	"	"	35.69	St	A	} Etoile double Immersion du satellite Très sûre
Mai 9	f. Gemin.	I. o.	39.17	R	K	
" "	"	"	19 16 19.60	R	K	
Juillet 12	49 Librae	I. o.	19.65	M	A	"
" "	"	"	22 4 11.15	M	S	Bonne "
Août 6	88 Virgin.	I. o.	11.25	R	K	"
" "	"	"	19 30 50.12	R	K	"
" 12	f. Sagittar.	I. o.	50.17	M	A	"
" "	"	"	21 57 41.01	R	K	"
" "	"	"	41.30	St	A	"
" 23	31 Tauri	E. o.	41.31	M	S	Très bonne
" "	32 Tauri	E. o.	0 48 30.00	R	A	"
" "	"	"	0 51 1.09	R	A	Bonne "
" "	"	"	1.14	M	S	"
" "	264 B Tauri	E. o.	1 51 29.27	R	A	"
" "	"	"	29.52	M	S	Peu sûre, probablement -0 ^s .2
" "	85 Tauri	E. o.	2 15 45.49	R	A	} Erreur de 5 sec. chez l'un des observateurs
" "	"	"	40.44	M	S	
" "	α Tauri	I. c.	4 21 57.47	R	A	
" "	"	"	57.32	M	S	Très sûre
Septembre 12	χ Aquarii	I. o.	23 58 43.36	St	A	"
" 19	318 B Tauri	E. o.	22 58 18.75	St	A	Bonne "
" 25	Venus	I. c.	1 38 29.89	St	A	Premier contact ± 2 sec. images ondulantes
" "	"	"	1 39 6.09	St	A	Second contact, très sûre, dispari- tion momentanée
" "	"	E. o.	2 42 26.01	St	A	Premier contact, très sûre
" "	"	"	2 42 53.51	St	A	Dernier contact, très sûre
Octobre 3	29 Ophiuchi	I. o.	17 5 39.50	St	A	Bonne
" 17	115 Tauri	E. o.	21 4 13.09	R	A	"
" "	"	"	13.14	M	S	"

Later results published
in the Polish journal
devoted to astronomy.



The director of the Poznań Observatory since 1929.

Since 1919 at the Cracow Observatory, directed by prof. Tadeusz Banachiewicz, observations of variable stars and lunar occultations, theoretical works on celestial mechanics, co-operation in *Acta Astronomica* journal publishing.

I.a. : *Occultations de l'étoile 6 G. Librae par Jupiter et son satellite Ganymède (le 13 aout 1911). Acta Astronomica. Ser. a. Vol. I., 55-138. as a habilitation thesis at the Jagiellonian University in Kraków.*

Józef Witkowski (1892-1976)

In 1911 T.Banachiewicz predicted (*Astronomische Nachrichten*) the occultation of the star 6 G.Lib by Jupiter and its satellite Ganymedes on August 12-13, 1911. Both phenomena were successfully observed in China and Australia as well in South America, respectively (visually and photographically). Witkowski has analyzed the original photographic plates from Argentina.



Tadeusz Banachiewicz (1882-1954) In Poznań: observations of lunar occultations, asteroids, comets, time keeping development, calculation works on



Fryderyk Koebcke (1909–1969) Hieronim Hurnik (1919–2016) Janusz Pagaczewski (1906–1971)

Next active observers of occultations at the Poznań observatory

1	Kazimierz	Kordylewski	1923-1924	Poznań	480	91.7%
			1924-1963	Kraków		
2	Rozalia	Szafraniec	1934-1970	Kraków	347	90.8%
3	Maciej	Winiarski	1962-1979	Kraków	303	97.4%
4	Tadeusz	Banachiewicz	1901-1905	Warszawa	303	92.4%
			1921-1953	Kraków		
5	Eugeniusz	Rybka	1921-1923	Kraków	230	88.7%
			1923-1924	Warszawa		
			1933-1938	Lwów		
			1946-1951	Wrocław		
			1920-1928	Kraków		
6	Józef	Witkowski	1924	Warszawa	229	88.2%
			1929-1939	Poznań		
			1940-1945	Kraków		
			1946-1953	Poznań		
7	Maria	Kurpińska	1964-1975	Kraków	220	92.3%
8	Zbigniew	Dworak	1968-1976	Kraków	209	94.3%
9	Maximilian	Weisse	1825-1854	Kraków	157	95.5%
10	Władysław	Dziewulski	1901-1902	Warszawa	151	88.7%
			1907-1915	Kraków		
			1922-1939	Wilno		
			1950-1954	Piwnice		
11	Jan	Gadomski	1914-1926	Kraków	148	92.6%
			1927-1942	Warszawa		
12	Fryderyk	Koebcke	1930-1939	Poznań	139	93.5%
			1944-1945	Kraków		
			1946-1952	Poznań		
13	Jadwiga	Kordylewska	1930-1962	Kraków	134	94.0%
14	Stefan	Piotrowski	1933-1953	Kraków	130	97.7%
15	Aldona	Szczepanowska	1948-1962	Kraków	129	90.7%
16	Stanisław	Andruszewski	1923-1947	Poznań	126	94.4%
17	Lucjan	Orkisz	1921-1928	Kraków	121	93.4%
			1929-1938	Warszawa		
18	Lucjan	Grabowski	1920-1937	Lwów	118	75.4%
19	Janusz	Pagaczewski	1925-1932	Kraków	112	92.9%
			1933-1937	Poznań		
			1950-1961	Kraków		
20	Hieronim	Hurnik	1938-1939	Poznań	107	91.6%
			1946-1959	Poznań		
21	Michał	Kamieński	1922	Kraków	102	92.2%
			1923-1942	Warszawa		
22	Jerzy	Kreiner	1964-1975	Kraków	99	96.0%
23	Jerzy	Sławski	1923-1932	Poznań	92	85.9%
24	Józef	Ryzner	1914	Kraków	85	87.1%
			1914-1937	Lwów		
			1948-1950	Kraków		
25	Maciej	Bielicki	1929-1942	Warszawa	77	90.9%
26	Karol	Kozieł	1937-1957	Kraków	75	98.7%
27	Stanisław	Szeligowski	1923-1939	Wilno	69	89.9%
28	Władysław	Lichtenberg	1921-1926	Lwów	55	90.9%
29	Edyta	Warmbier	1932-1935	Poznań	50	94.0%

Statistics of
the Polish
lunar
occultation
observations
made by
professional
astronomers

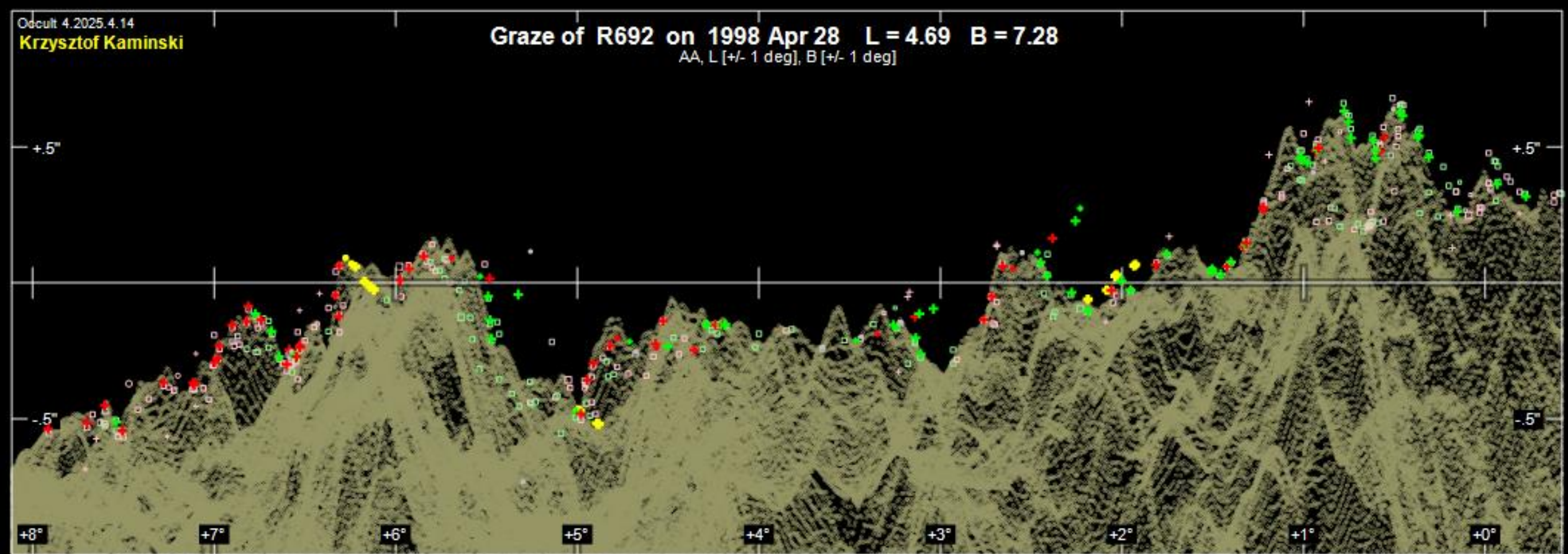
The Poznań
astronomers are
marked with red.
The last column
gives the
percentage of
correct outcomes,
after the
eliminating of
obvious errors.



Since 1970s amateur observations of lunar occultation were conducted.

I.a. Zbigniew Rzepka recorded around 80 D and R contacts at Poznań and later at other locations, as a member of the Section of Positions and Occultation Observation of the Polish Association of Amateur Astronomers (SOPiZ PTMA).

The graze of Aldebaran on April 28, 1998 observed near Łódź
Two Poznań observers are marked in yellow in this and the next picture.

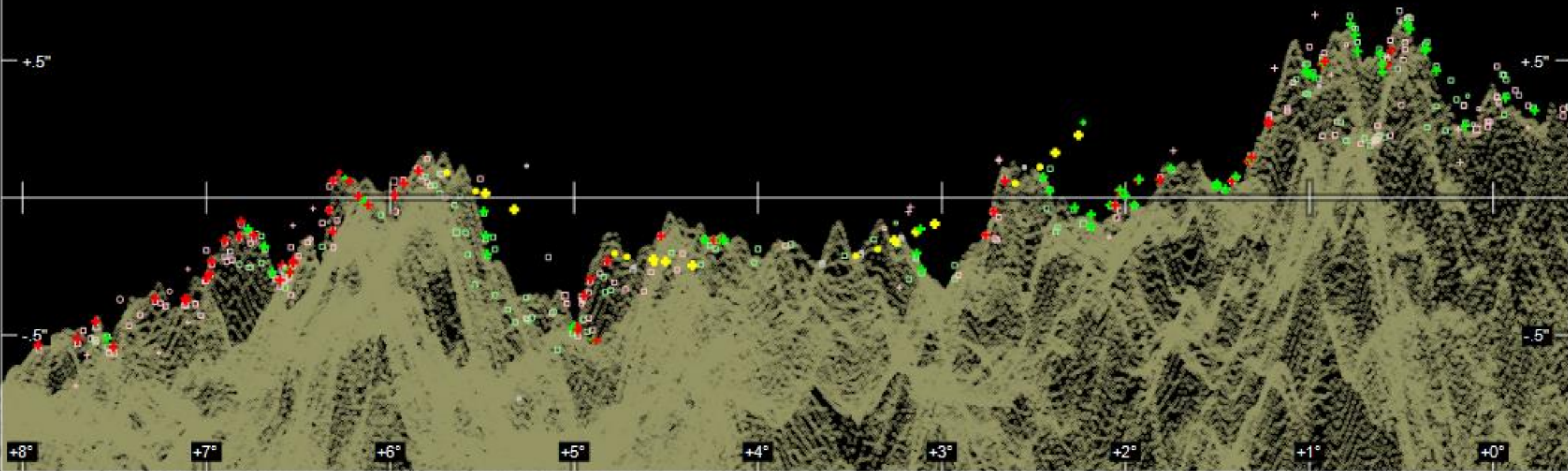


Occult 4.2025.4.14

Jan Nowicki

Graze of R692 on 1998 Apr 28 L = 4.69 B = 7.28

AA, L [± 1 deg], B [± 1 deg]



A systematic error of timekeeping, worsening the final results, is visible.

Thank You for your attention!