GRAZPREP: Features and Limitations

Dr. Eberhard Riedel, IOTA/ES, Munich, Germany

ESOP XXXVI, Freiberg, 16.09.2017
GRAZPREP: Features and Limitations

XZ 15260 (32 alpha Leo (Regulus)), Mag. 1.4, Sep 18, 2017, 3h 26m 59.4s UT, N

GRAZPREP 4.04, IOTAves

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GRAZPREP: Features and Limitations

Graze-Report ZC 2399 (24 (Sco)/Oph, 4.9 mag.):

Aug 29, 2017 19h UT E 8° 42' 18.1" N 50° 30' 25.1" El 266m, Off -4984m

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#### Occultation Report (IOTA 2008 Report format for lunar occultation observations (VERSION 1.0 1 September 2008))

**Header**
- **Place name:** Lunar Occult
- **Representative:** Esso AG, Heuchelheim, Germany
- **Email address:** Klaus@spruck.net

**Station data**
- **Number of stations:** 6

|----|----|-----|-----|------|-----|------|------|------|-----|------|------|------|    |           |    |               |               |
| 1  | A  | R   | A   | 6    | 91  | E    | 8    | 42   | 23.2| N    | 50   | 30   | 46.7| 10 | 1.295 | M A | Reiner Euler    |                |
| 2  | B  | N   | M   | 20   | 100 | E    | 8    | 42   | 55.2| N    | 50   | 30   | 40.4| 10 | 1.190 | M B | Jürgen Krall    |                |
| 3  | C  | R   | E   | 8    | 50  | E    | 8    | 42   | 24.7| N    | 50   | 30   | 34.5| 10 | 1.266 | M C | Josef Grass     |                |
| 4  | D  | R   | A   | 15   | 75  | E    | 8    | 42   | 39.8| N    | 50   | 30   | 30.6| 10 | 1.260 | M D | Dirk Raatz      |                |
| 5  | E  | N   | A   | 20   | 100 | E    | 8    | 42   | 56.0| N    | 50   | 30   | 26.3| 10 | 1.262 | M E | Tob Ahrens      |                |
| 6  | F  | N   | E   | 45   | 200 | E    | 8    | 42   | 18.1| N    | 50   | 30   | 25.1| 10 | 1.266 | M F | Klaus Spruck    |                |

**Observation data**
- **Total number of contacts to be reported:** 74

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*Show timings on lunar limb*  *Save Reporfile (*,TXT*)  *Cancel*
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**Occultation Report (IOTA 2008 Report format for lunar occultation observations (VERSION 1.0) 1 September 2008)**

**Header**
- Place name: Limcs-Occlt
- Representative: AstroAG Heidelbeirg, Germany
- Email address: klaus@spuck.net

**Station data**
- Number of stations: 6

**Observation data**
- Total number of contacts to be reported: 74

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**Notes:**
- Y Method of timing and recording
- G Video with time insertion, times extracted by frame analysis
- V Video with other time timing, times extracted by frame analysis
- S Stopwatch (visual)
- T Tape recorder (visual)
- E Eye and ear
- P Photoelectric
- K Key-tapping - including computer keyboards
- X Chronograph
- C Camera and clock
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Graze of ZC 2399 (4m9), Aug 29, 2017 19h UT  Libration Long. 1.52, Lat. -5.66  No Shift

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Graze of ZC 2399 (4m9), Aug 29, 2017 19h UT  Libration Long. 1.52, Lat. -5.66, Shift S 0.013" W 0.006" Rad -0.013"
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Grazé of ZC 2399 (4m9), Aug 29, 2017 19h UT. Libration Long. 1.52, Lat. 5.96, Shift S 0.013" W 0.006" Rad -0.013"

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Graze of ZC 2399 on 20170829
Libration 1.5 -5.66 (deg)
Basis = 99G

Height above lunar mean limb

Reiner Euler
Joerg Kroll
Josef Graef
Dirk Raatz
Tobi Ahrens
Klaus Spruck

Lunar limb profiles of LRO/LOLA

Axis Angle

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Video observations of fadings and blinks of the starlight reported (Giant star G8 II/III)
Conclusions and demands:

The precision of the prediction still lacks from:

- Uncertainties in the general stellar position
- Uncertainties about double- and multiple star systems
- Uncertainties in the lunar limb terrain
Demands concerning GRAZPREP:

Further improvements only after the final Gaia-release

Finding a standardized method to display the lunar profile at different libration angles
Outlook for GRAZPREP:

Display of apparent stellar paths of double and multiple systems

Improvement of the lunar profile display for reductions

Inclusion of total occultation predictions (Planetarium function)
Thanks for listening!

Only an occulted star is a lucky star!