Retours TTSO14 suivi en visio conférence

13/04/2020 2:00	13/04/2020 2:00 PM	13/04/2020 12:00 PM	lunch break	
13/04/2020 3:00	13/04/2020 3:00 PM	13/04/2020 1:00 PM	Review of the Asteroidal Occultation dataset	Dave Gault
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13/04/2020 5:00	13/04/2020 5:00 PM	13/04/2020 3:00 PM	break	
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13/04/2020 6:30	13/04/2020 6:30 PM	13/04/2020 4:30 PM	end	

Pascal A. séance du 18/04/2020

Crédits

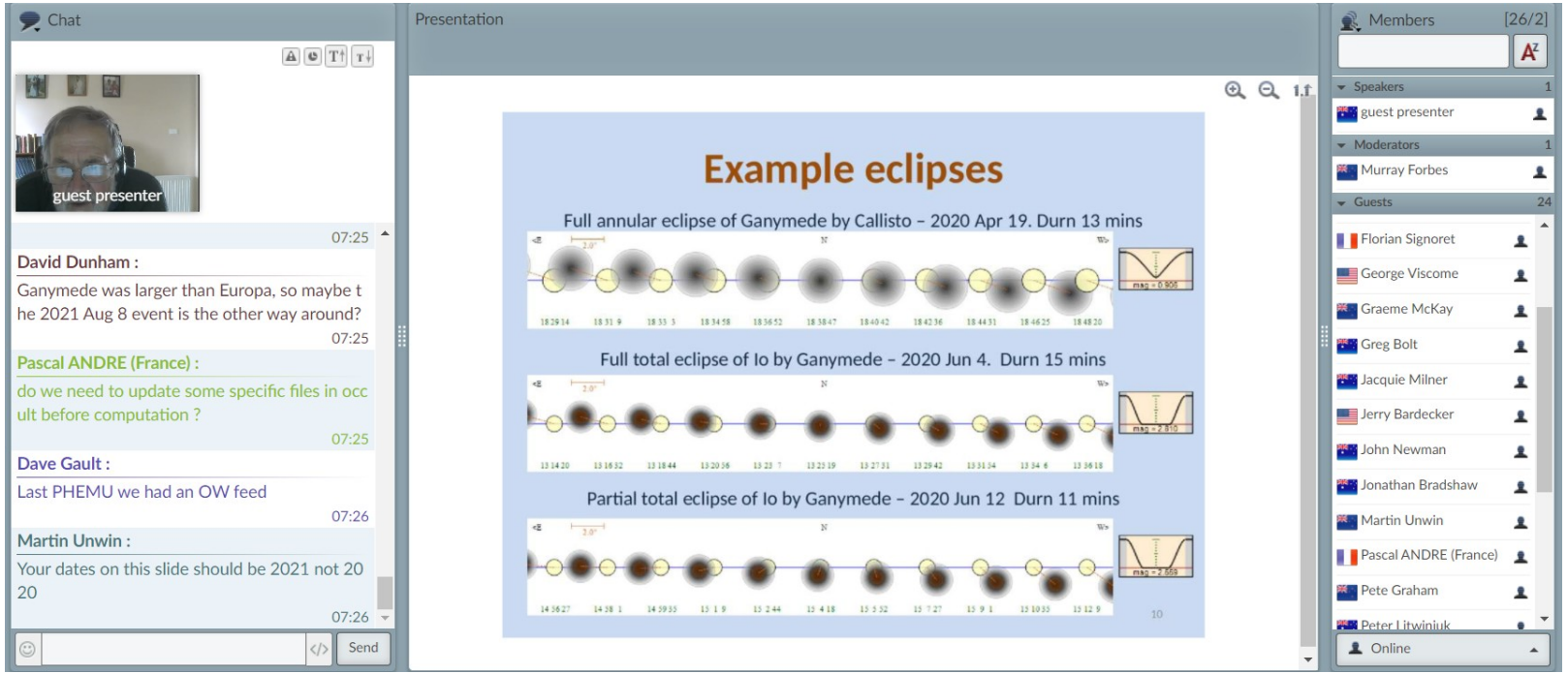
- Présentations du TTSO14 http://www.occultations.org.nz/meetings/TTSO14/Schedule.htm

- https://en.wikipedia.org/wiki/John_Broughton

  John Broughton, artiste astronome australien avec plus de 1000 découvertes de planètes mineures/ astéroïdes

- http://www.asteroidoccultation.com/observations/DriftScan/Index.htm un article synthétique sur les techniques mises en œuvre par J.Broughton
- http://www.occultations.org.nz/meetings/TTSO14/UltraPortableTelescopes.mp4

  l'utilisation du wombat 250



https://www.astrosignoret.fr/index.php

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Mutual eclipses and occultations of planetary satellites : Occult v.4.6.1

with Predictions... | show Recording Timer | Help | Exit

Jupiter / Saturn / Uranus

Start Year & month: 2020 4

End Year & month: 2022 4

Limit to site location

Limit to events visible at: Longitude 2 Latitude 43

0.0" Miss distance

Include hidden events

Compute

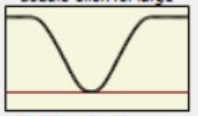
Year	M	D	h	m	s	Event Type	Ph	Dur	dMag	%Ill	Sep	PA	MinD	Alt
2021	3	28	4	38	50	(I) occ (II)	P	193	0.2	83.9	53.3	249	0.471	5
2021	4	12	4	29	34	(I) ecl (IV)	A	1515	0.7	50.5	27.9	253	0.138	12
2021	5	6	3	29	21	(I) ecl (II)	P	321	1.7	20.9	106.2	248	0.183	16
2021	5	14	3	48	9	(III) ecl (I)	P	510	2.2	13.0	74.4	67	0.277	23
2021	5	21	2	38	17	(III) ecl (II)	E	256	0.0	99.7	116.4	66	1.337	17
2021	5	29	2	51	31	(III) ecl (I)	P	2838	4.0	2.6	49.8	246	0.195	23
2021	6	5	0	33	45	(III) ecl (I)	P	1506	4.8	1.2	23.2	70	0.165	6
2021	6	7	1	38	56	(I) ecl (II)	P	291	0.2	85.8	134.4	248	0.716	17
2021	7	4	0	8	8	(III) ecl (I)	E	223	0.0	99.6	108.5	247	1.380	19
2021	7	7	0	48	4	(I) ecl (III)	E	119	0.0	100.0	120.1	249	1.516	26
2021	7	9	0	6	46	(I) ecl (II)	E	111	0.0	100.0	153.9	248	1.066	22
2021	8	1	23	4	9*	(III) occ (II)	P	7718	0.1	92.6	161.5	246	1.107	26
2021	8	1	23	4	9*	(III) occ (II)	P	1774	0.1	92.6	161.5	246	1.107	26
2021	8	8	20	46	6	(III) ecl (II)	P	3765	0.4	69.3	100.1	245	0.808	11
2021	8	9	4	12	38	(III) ecl (II)	P	3908	1.8	18.6	193.7	246	0.447	17
2021	8	19	4	24	52	(I) ecl (III)	P	1132	0.1	92.8	30.0	256	0.974	8
2021	8	30	19	9	9	(III) ecl (II)	E	753	0.1	92.2	229.8	248	1.032	11

Right-click a highlighted line to display a graphic of the planet and its satellites, or put the event into Recording Timer

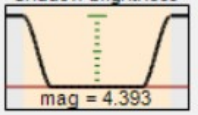
Contact times

	h	m	s
T1 =	0	21	12
T2 =	0	24	14
T3 =			
TMax =	0	33	45
T5 =			
T6 =	0	43	17
T7 =	0	46	18

Light curve *double-click for large*



Shadow brightness

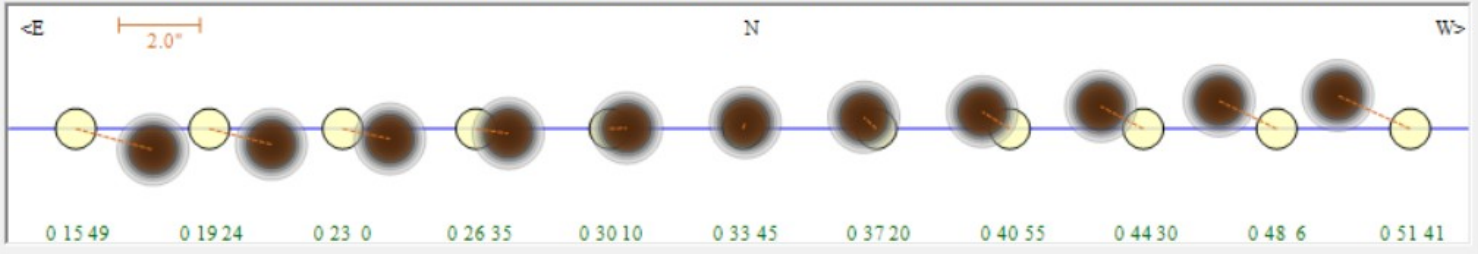


Ph codes: Difficult events
e: occulting satellite in planet's shadow
t: satellite in transit
Hidden events
f: occulted satellite in planet's shadow
g: both satelllites in planet's shadow
h: satellite behind planet

Increase plot scale: x1 x2 x5 x10

Increase plot time-span: x1 x2 x3 x4

Plot of the relative positions of the two moons, or moon plus eclipsing shadow, over the period of the selected event. For eclipses, umbra + penumbra is shown.



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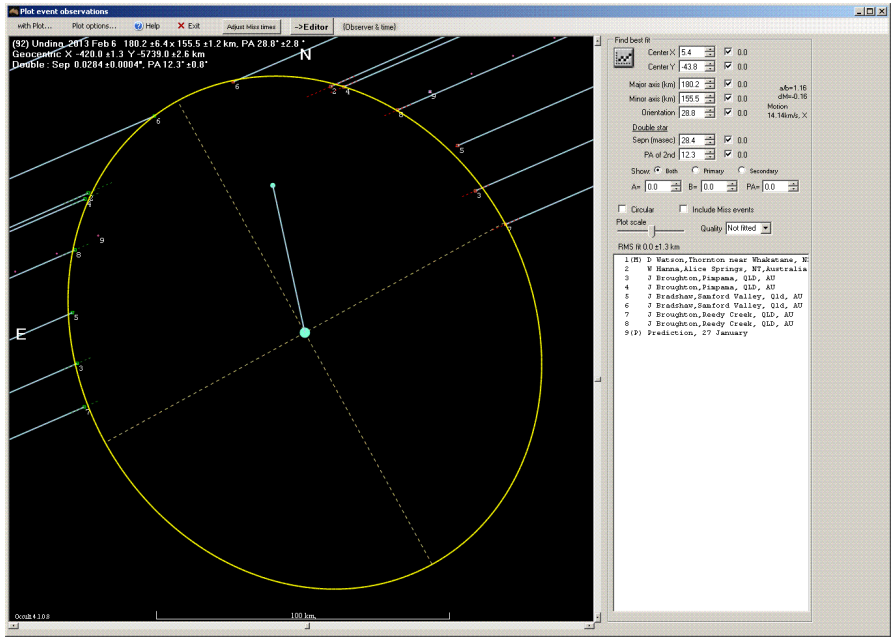
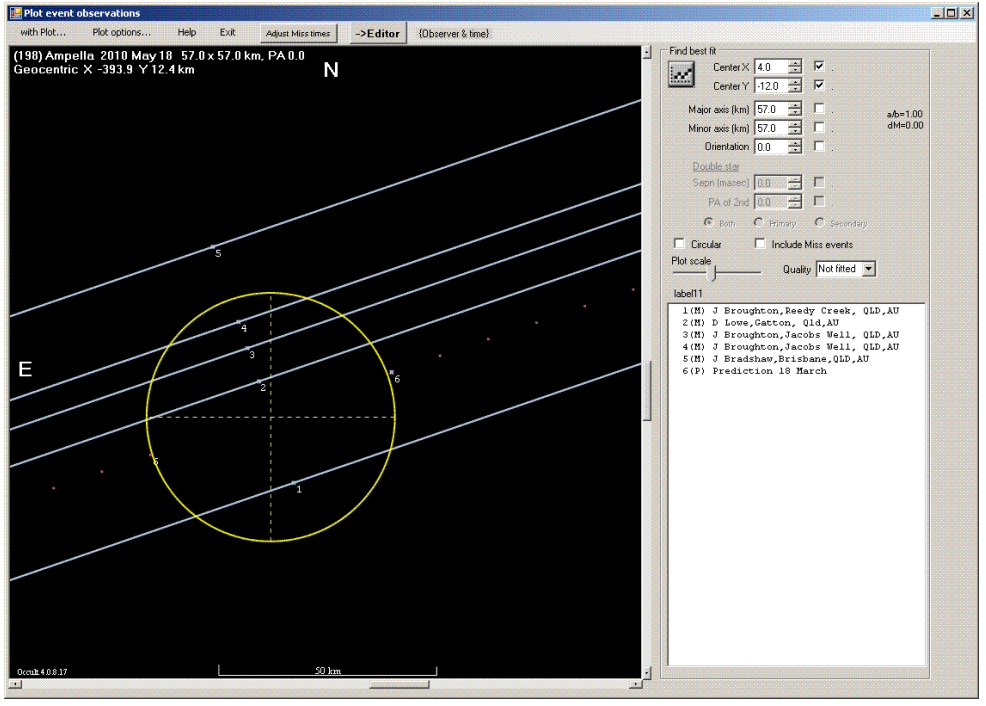
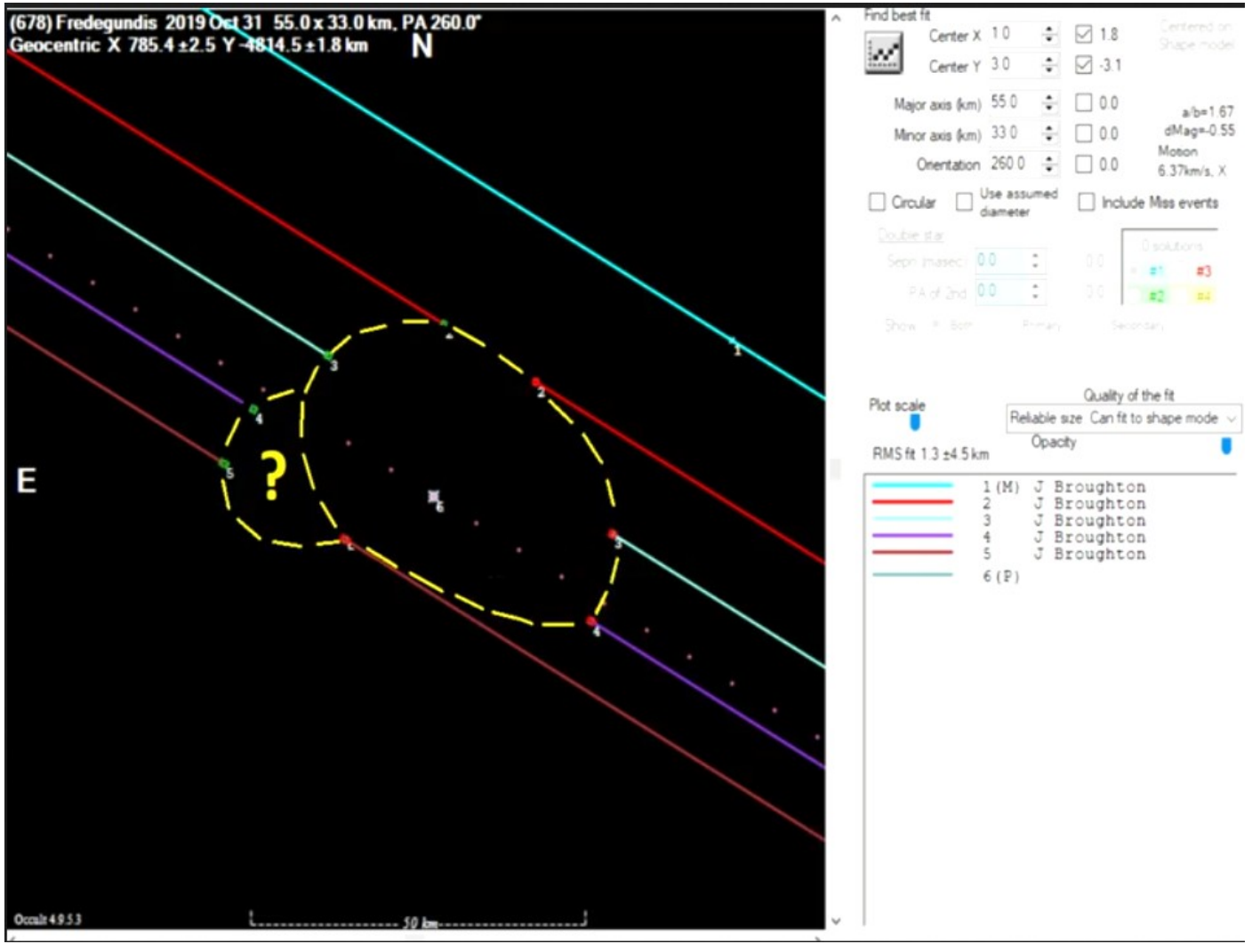

Plot event observations
with Plot...
Plot options...
Help
Exit
Adjust Miss times
->Editor
(Observer & time)
(92) Unding 2013 Feb 6 190.2 ±6.4 x 155.5 ±1.2 km, PA 28.8° ±2.8°
Geocentric X -420.0 ±1.3 Y -5739.0 ±2.6 km
Double - Sep 0.0284 ±0.0004", PA 12.3° ±0.8°
N
E
100 km
Occult 4.2.0.8
Find best fit
Center X 5.4
Center Y -43.8
Major axis (km) 180.2
Minor axis (km) 155.5
Orientation 28.8
a/b=1.16
dM=0.16
Motion
14.14km/s, X
Double star
Sepn (masec) 28.4
PA of 2nd 12.3
Show Both Primary Secondary
A= 0.0
B= 0.0
PA= 0.0
Circular
Include Miss events
Plot scale
Quality Not fitted
RMS fit 0.0 ±1.3 km
1(M) D Watson,Thornton near Whakatane, N
2 W Hanna,Alice Springs, NT,Australia
3 J Broughton,Pimpama, QLD, AU
4 J Broughton,Pimpama, QLD, AU
5 J Bradshaw,Samford Valley, Qld, AU
6 J Bradshaw,Samford Valley, Qld, AU
7 J Broughton,Reedy Creek, QLD, AU
8 J Broughton,Reedy Creek, QLD, AU
9(P) Prediction, 27 January


Plot event observations
with Plot...
Plot options...
Help
Exit
Adjust Miss times
->Editor
(Observer & time)
(198) Ampella 2010 May 18 57.0 x 57.0 km, PA 0.0
Geocentric X -393.9 Y 12.4 km
N
E
50 km
Occult 4.0.8.17
Find best fit
Center X 4.0
Center Y -12.0
Major axis (km) 57.0
Minor axis (km) 57.0
Orientation 0.0
a/b=1.00
dM=0.00
Double star
Sepn (masec) 0.0
PA of 2nd 0.0
Both Primary Secondary
Circular
Include Miss events
Plot scale
Quality Not fitted
label11
1(M) J Broughton,Reedy Creek, QLD,AU
2(M) D Lowe,Gatton, Qld,AU
3(M) J Broughton,Jacobs Well, QLD,AU
4(M) J Broughton,Jacobs Well, QLD,AU
5(M) J Bradshaw,Brisbane,QLD,AU
6(P) Prediction 18 March


(678) Fredegundis 2019 Oct 31 55.0 x 33.0 km, PA 260.0°
Geocentric X 785.4 ±2.5 Y -1814.5 ±1.8 km
N
E
?
Occult 4.9.5.3
50 km
Find best fit
Center X 1.0
Center Y 3.0
1.8
-3.1
Major axis (km) 55.0
Minor axis (km) 33.0
Orientation 260.0
0.0
a/b=1.67
dMag=-0.55
Motion
6.37km/s, X
Circular
Use assumed diameter
Include Miss events
Plot scale
Quality of the fit
Reliable size Can fit to shape mode
Opacity
RMS fit 1.3 ±4.5 km
1 (M) J Broughton
2 J Broughton
3 J Broughton
4 J Broughton
5 J Broughton
6 (P)

Un réseau de télescopes simples portables mis en station sur plusieurs sites

2019
The Wombat 250

- Extremely compact folded up
- Detachable legs
- Integrated struts
- Integrated dew shield
- Collapsible and adjustable-length prime-focus support
- Collapsible dew shield support
- Ball bearings on slow-motion controls
- Spring-loaded lateral slow-motion gearing

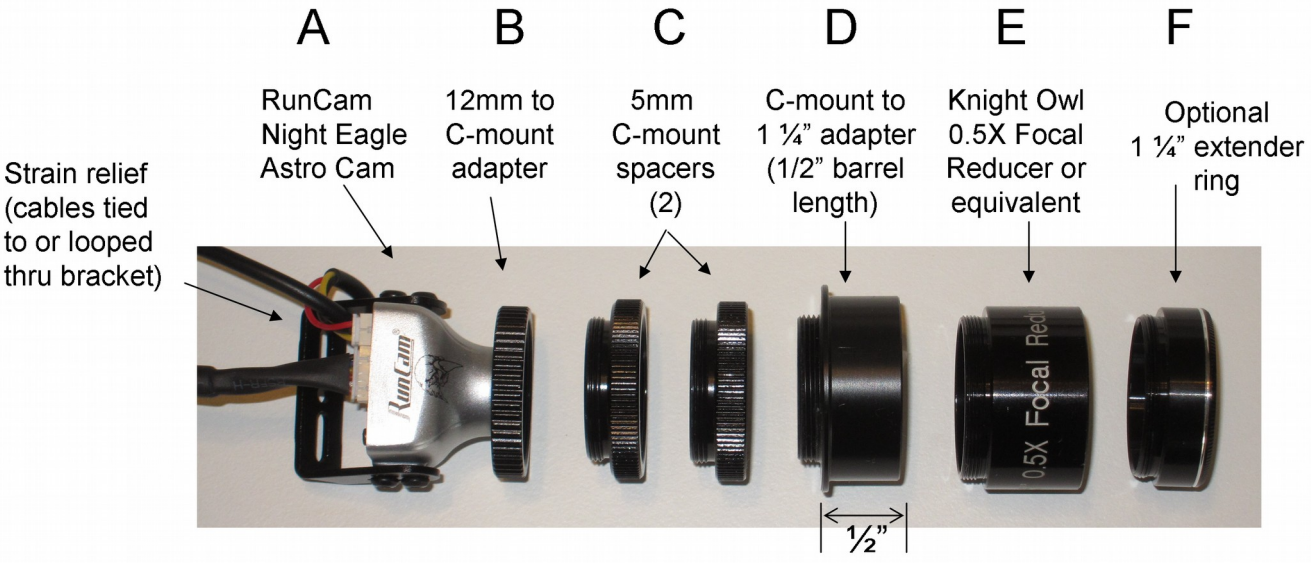

2


2
Please do not disturb -
This is one of several precisely-pointed automatic
astronomical stations, deployed temporarily tonight
to measure the size and shape of an asteroid as it
eclipses a star. If you have any questions or concerns,
call John Broughton on 0406-386-761.

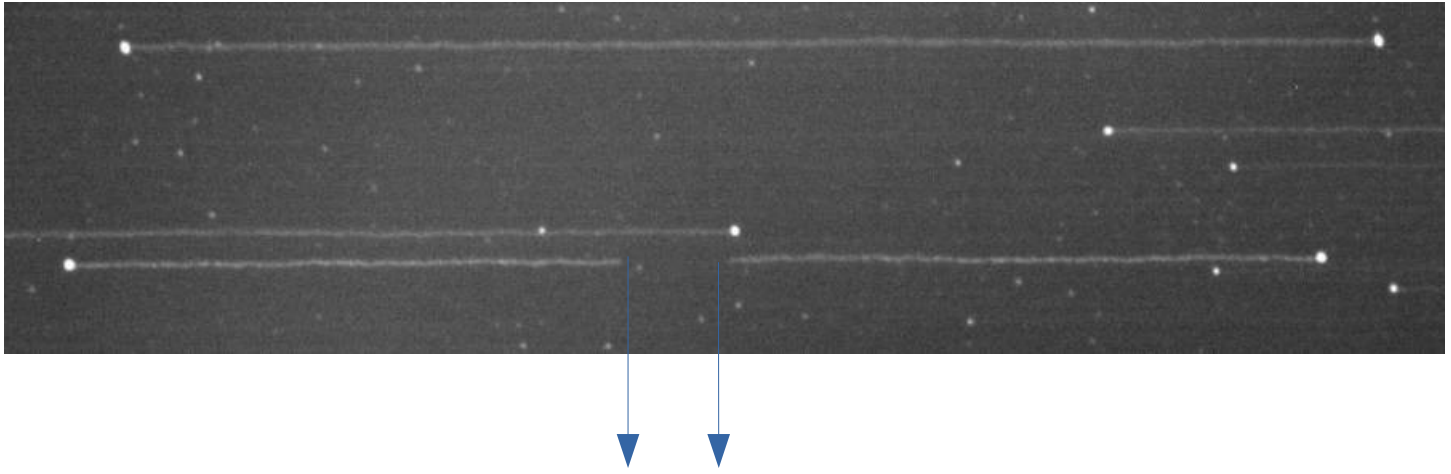
RunCam Night Eagle “Astro” Camera Accessories for Refractors Larger than Mighty Mini or Newtonian Reflectors*

Assembled view:

*Note: In scopes with limited range of inward focuser travel, the camera+focal reducer may not come to focus without a special camera carrier, see below. (2” focusers only)

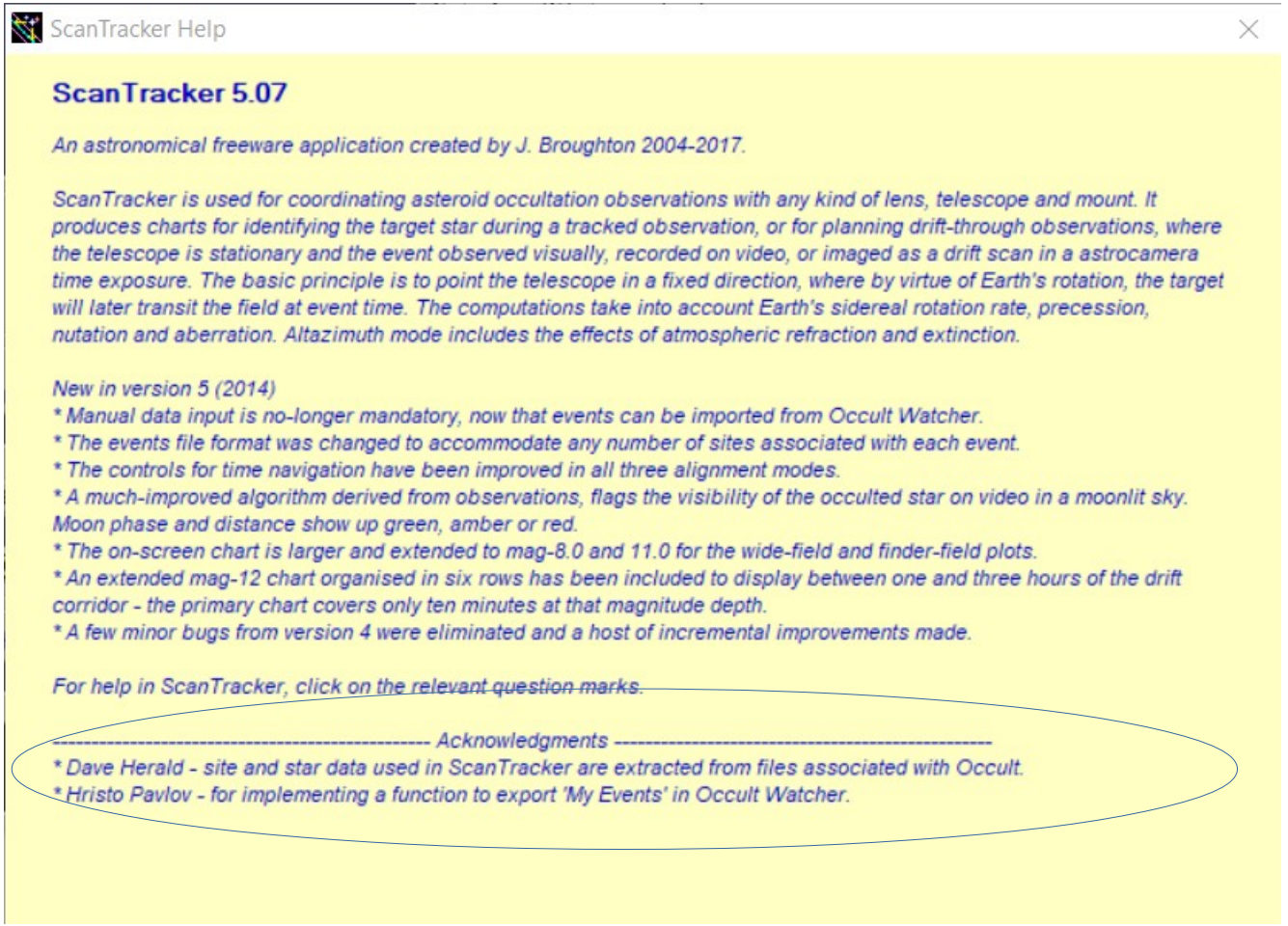


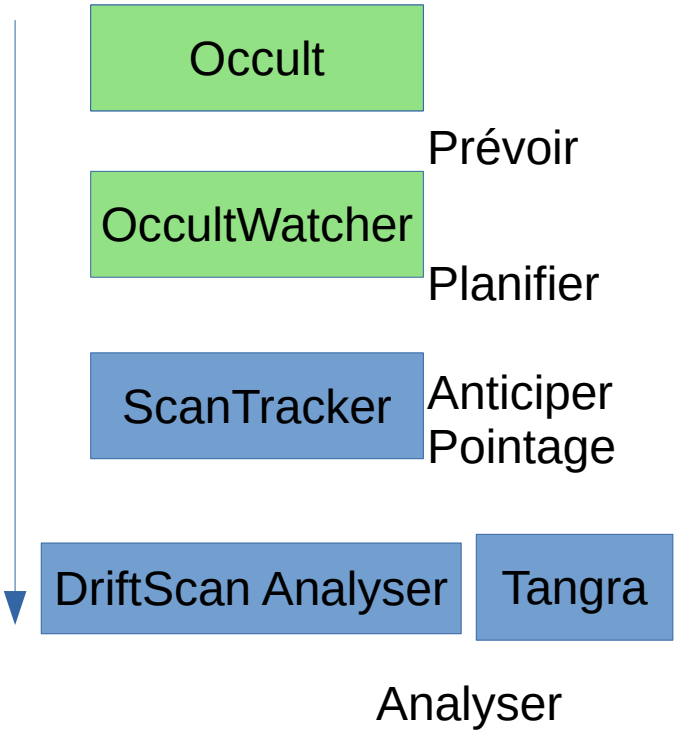
- Technique du Drift scan (aegina-20190911-t82)

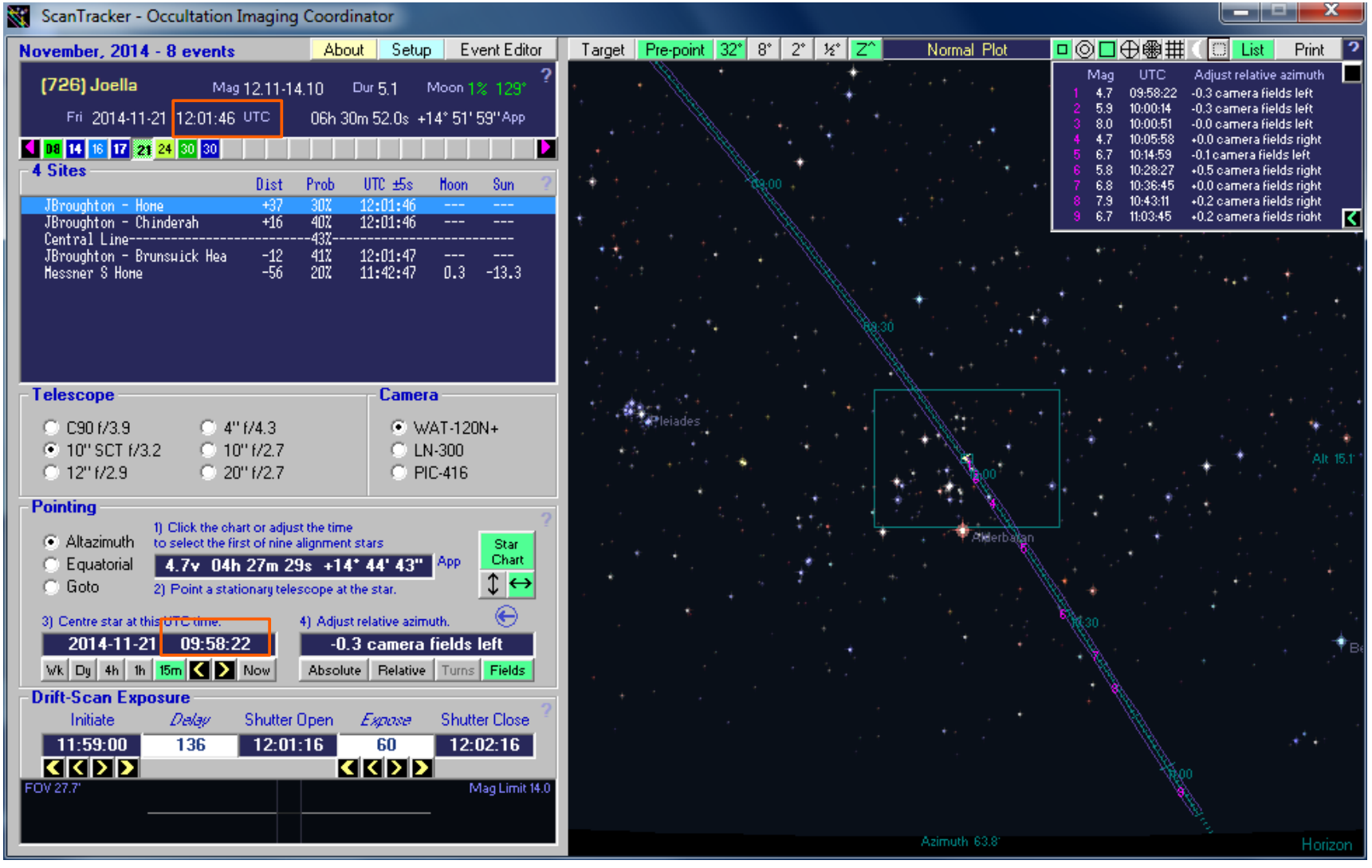


- Ou flux video rapide (Watec, Run cam)

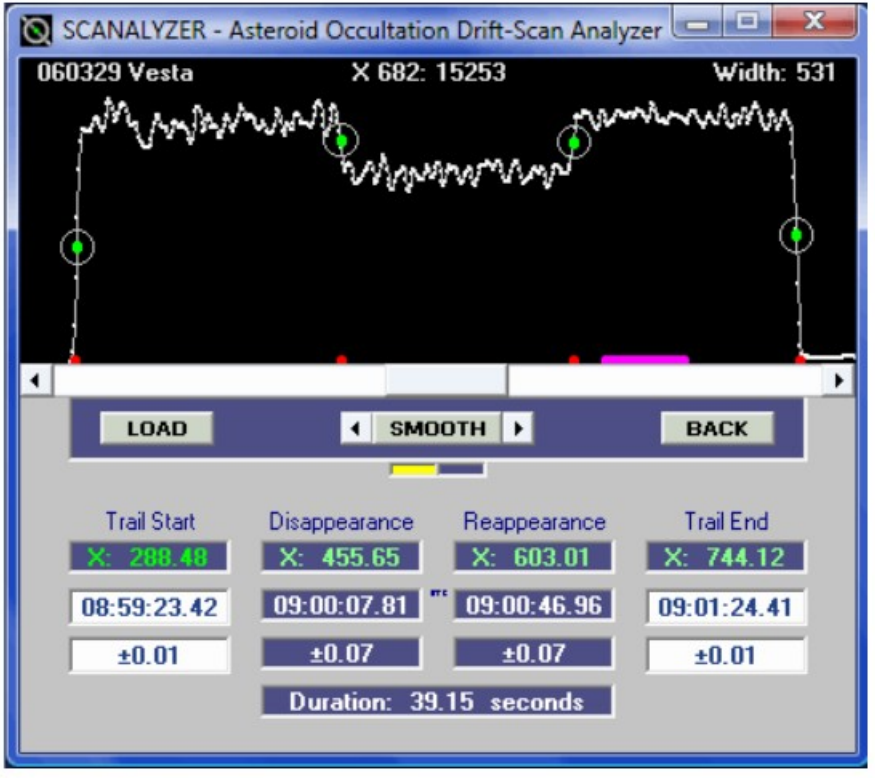
Comment pointer un objet avec ces télescopes ultraportable Alt/Az ?


ScanTracker Help
ScanTracker 5.07
An astronomical freeware application created by J. Broughton 2004-2017.
ScanTracker is used for coordinating asteroid occultation observations with any kind of lens, telescope and mount. It produces charts for identifying the target star during a tracked observation, or for planning drift-through observations, where the telescope is stationary and the event observed visually, recorded on video, or imaged as a drift scan in a astrocamera time exposure. The basic principle is to point the telescope in a fixed direction, where by virtue of Earth's rotation, the target will later transit the field at event time. The computations take into account Earth's sidereal rotation rate, precession, nutation and aberration. Altazimuth mode includes the effects of atmospheric refraction and extinction.
New in version 5 (2014)
* Manual data input is no-longer mandatory, now that events can be imported from Occult Watcher.
* The events file format was changed to accommodate any number of sites associated with each event.
* The controls for time navigation have been improved in all three alignment modes.
* A much-improved algorithm derived from observations, flags the visibility of the occulted star on video in a moonlit sky. Moon phase and distance show up green, amber or red.
* The on-screen chart is larger and extended to mag-8.0 and 11.0 for the wide-field and finder-field plots.
* An extended mag-12 chart organised in six rows has been included to display between one and three hours of the drift corridor - the primary chart covers only ten minutes at that magnitude depth.
* A few minor bugs from version 4 were eliminated and a host of incremental improvements made.
For help in ScanTracker, click on the relevant question marks.
---------- Acknowledgments ----------
* Dave Herald - site and star data used in ScanTracker are extracted from files associated with Occult.
* Hristo Pavlov - for implementing a function to export 'My Events' in Occult Watcher.


Occult
Prévoir
OccultWatcher
Planifier
ScanTracker
Anticiper
Pointage
DriftScan Analyser
Tangra
Analyser



2 heures avant l'occultation, le logiciel prévoit le pointage qui correspondra au moment voulu lorsque la terre aura tourné à celui de l'occultation de façon à encadrer un drift scan sur la totalité du champ.
A l'heure du prépointage une sélection d'étoiles brillantes est proposée


SCANALYZER - Asteroid Occultation Drift-Scan Analyzer
060329 Vesta
X 682: 15253
Width: 531
LOAD
SMOOTH
BACK
Trail Start
Disappearance
Reappearance
Trail End
X: 288.48
X: 455.65
X: 603.01
X: 744.12
08:59:23.42
09:00:07.81
09:00:46.96
09:01:24.41
±0.01
±0.07
±0.07
±0.01
Duration: 39.15 seconds

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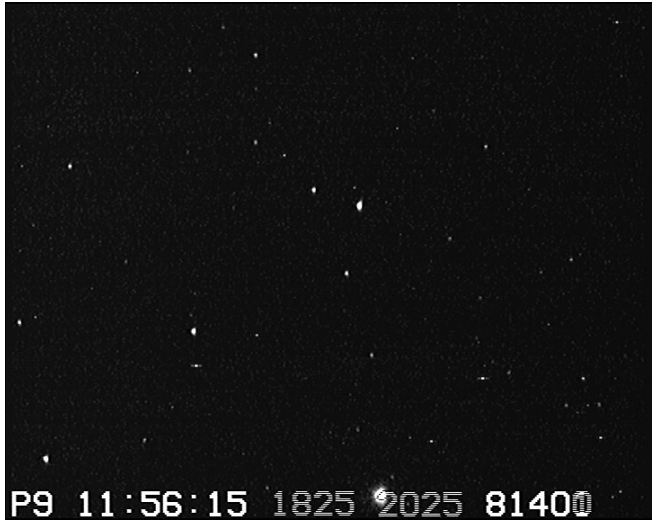
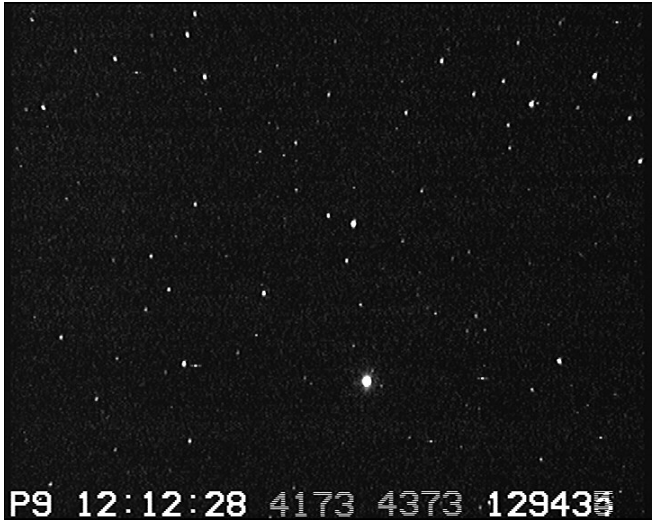
Réducteurs de focales

- Retour d’expérience sur utilisation des réducteurs de focales sur des SC Télescopes
- Le montage optique des reducteurs de focale (bagues allonge entre ccd et reducteur) est sans doute plus critique que le choix du réducteur

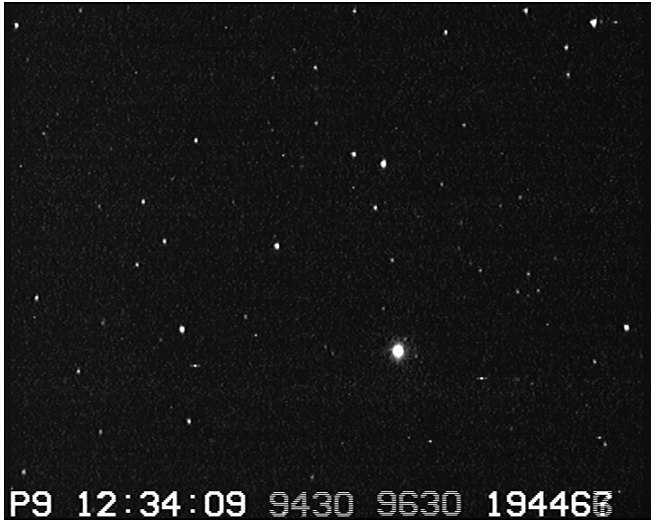
T Pyx – 30cm Meade LX200 ACF OTA – Watec 910BD
16x (8 Frame) Integration- Gain = 32 dB – Gamma = 0.45



Meade f/6.3 with spacer

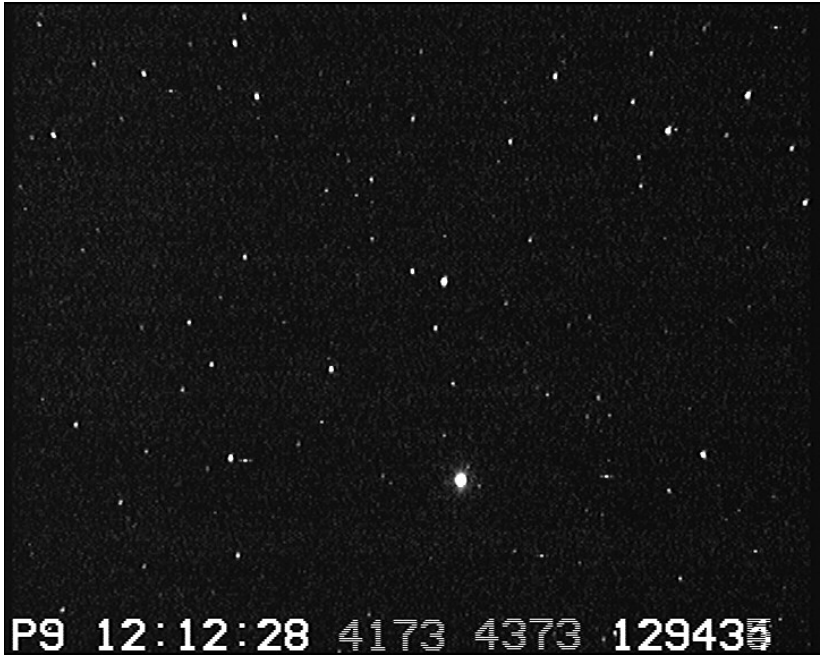


Meade f/3.3 with spacer



Knight Owl with short spacer

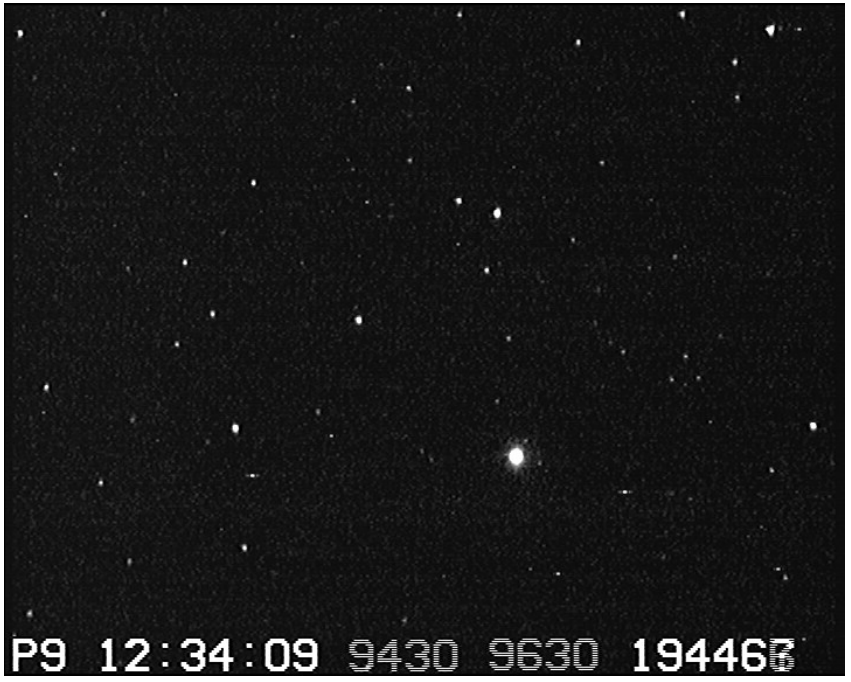
T Pyx – 30cm Meade LX200 ACF OTA – Watec 910BD
16x (8 Frame) Integration- Gain = 32 dB – Gamma = 0.45



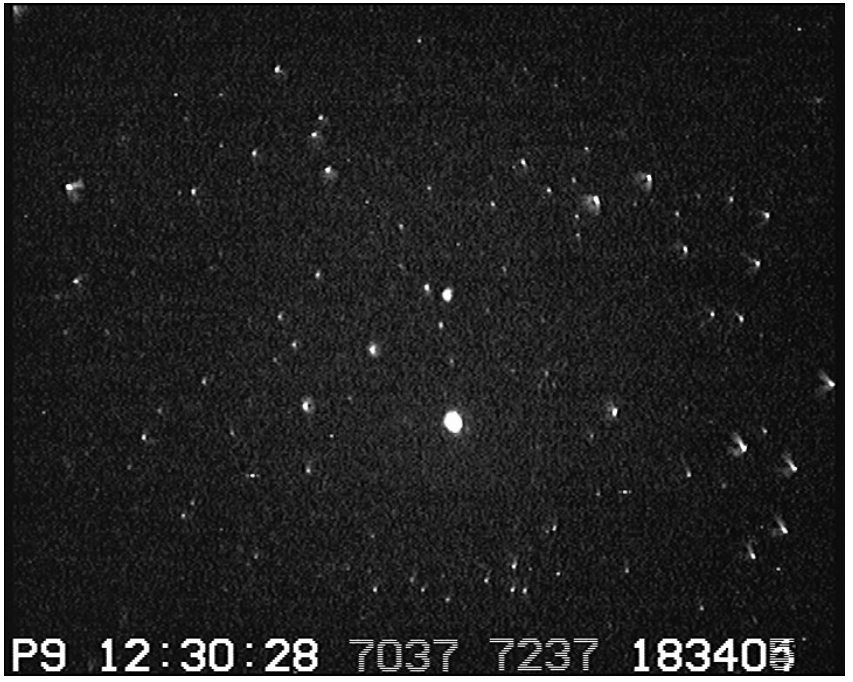
Meade f/3.3 with spacer

Meade f/3.3 with smaller spacer

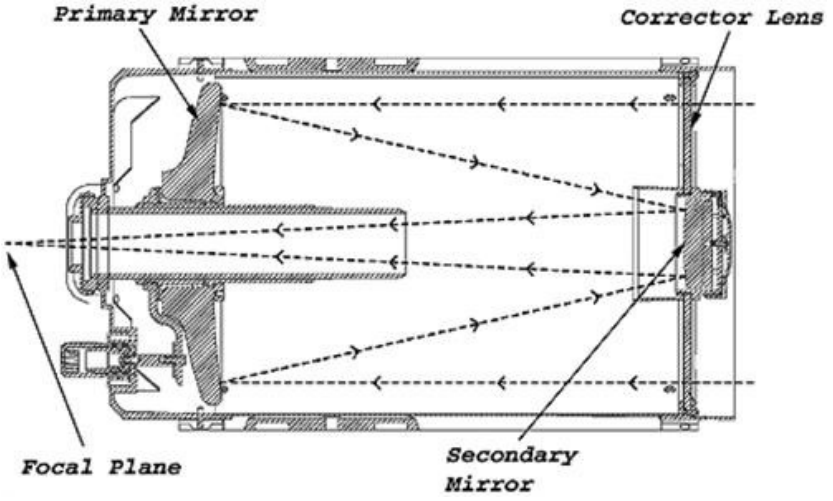
T Pyx – 30cm Meade LX200 ACF OTA – Watec 910BD
16x (8 Frame) Integration- Gain = 32 dB – Gamma = 0.45



Knight Owl with short spacer



Knight Owl with longer spacer



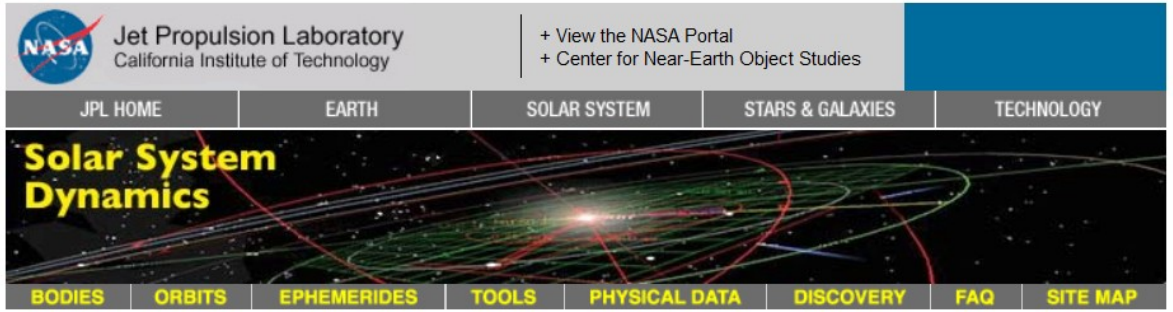
Is this resulting in shadowing by the light baffle?

Image from Celestron.com

- Optical spacing of camera from focal reducer may be more important than which focal reducer you use.
- Using extreme values of focal reducer to camera spacing is forcing the focus (primary mirror location) of the SCT into extreme positions to reach a focus.

Retours TTSO14 suivi en visio conférence

13/04/2020 2:00	13/04/2020 2:00 PM	13/04/2020 12:00 PM	lunch break	
13/04/2020 3:00	13/04/2020 3:00 PM	13/04/2020 1:00 PM	Review of the Asteroidal Occultation dataset	Dave Gault
13/04/2020 3:30	13/04/2020 3:30 PM	13/04/2020 1:30 PM	Shape models	Dave Herald
13/04/2020 4:00	13/04/2020 4:00 PM	13/04/2020 2:00 PM	Ultra-Portable Telescopes for Occultation Expeditions	John Broughton
13/04/2020 4:30	13/04/2020 4:30 PM	13/04/2020 2:30 PM	Adventures with Focal Reducers	Steve Kerr
13/04/2020 5:00	13/04/2020 5:00 PM	13/04/2020 3:00 PM	break	
13/04/2020 5:15	13/04/2020 5:15 PM	13/04/2020 3:15 PM	Phemu 2021	Dave Herald
13/04/2020 5:30	13/04/2020 5:30 PM	13/04/2020 3:30 PM	Horizons predictions	Dave Herald
13/04/2020 6:00	13/04/2020 6:00 PM	13/04/2020 4:00 PM	Highlights of double star occultations over the last year Click here for the presentation's notes.	Brian Loader
13/04/2020 6:15	13/04/2020 6:15 PM	13/04/2020 4:15 PM	Interesting minor planet occultations over Australia/NZ for the next year	Steve Kerr
13/04/2020 6:30	13/04/2020 6:30 PM	13/04/2020 4:30 PM	end	



IMPORTANT: The SSD Announcement email list is now available. Major changes are coming in the near future, including possible hostname and/or URL changes. To be notified of such changes, subscribe to this email list.

Please visit this page for more details.

Don't show this message again

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- Documentation
- Web Interface
- Telnet Method
- E-mail Method
- System News

HORIZONS System

The JPL HORIZONS *on-line* solar system data and ephemeris computation service provides access to key solar system data and flexible production of highly accurate ephemerides for solar system objects (957824 asteroids, 3621 comets, 209 planetary satellites, 8 planets, the Sun, L1, L2, select spacecraft, and system barycenters). HORIZONS is provided by the Solar System Dynamics Group of the Jet Propulsion Laboratory.

The HORIZONS system can be accessed using any of the following methods:

- **telnet** (instructions)
- **email** (instructions)
- **web-interface** (see note below)

NOTE: Although the web-interface to HORIZONS provides *nearly* all capabilities of the primary telnet interface (and email interface), it does not provide the following:
- Small-body PARAMETER-MATCHING population searches (use the small-body search engine as an alternative)
- Integration of USER-INPUT ORBITS
- SPK BINARY FILE production
- CLOSE-APPROACH TABLES

HORIZONS Documentation - (updated 2019-Dec-10)

La présentation de Dave Herald explique pas à pas comment utiliser dans Occult les eléments orbitaux du JPL à la place des données Astorb du MPC.
Cela permet d'obtenir des prédictions de dernière minute avec une excellente précision