Session	Observer	2014	UT	Data Pts
2	FP	Apr 2	06:09 - 12:11	273
4	FP	Apr 4	05:56 - 12:00	270
6	FP	Apr 8	05:35 - 11:45	267
8	FP	Apr 9	05:13 - 11:45	328
10	FP	Apr 10	05:40 - 08:34	115
12	EMA	Apr 13	00:23 - 04:31	114
14	EMA	Apr 13-14	23:46 - 03:45	87
16	EMA	Apr 14-15	23:54 - 04:02	109
18	FP	Apr 15	07:12 - 08:58	89
20	EMA	Apr 18-19	23:54 - 03:47	96
22	EMA	Apr 19-20	23:27 - 07:05	200
24	EMA	Apr 20-21	23:12 - 03:36	113
26	EMA	Apr 22	01:03 - 01:41	20
28	EMA	Apr 22-23	23:22 - 04:29	120
30	FP	Apr 23	06:12 - 10:02	139
32	EMA	Apr 23-24	22:54 - 02:55	113
34	EMA	Apr 24-25	22:58 - 02:04	91
36	EMA	May 1-2	22:42 - 02:43	106
38	FP	May 2	04:57 - 10:00	250
40	EMA	May 2-3	22:40 - 02:44	109
42	FP	May 3	03:20 - 04:28	49
44	FP	May 6	03:12 - 03:50	33
46	EMA	May 6-7	23:14 - 03:09	113
48	FP	May 7	03:10 - 04:05	46
50	FP	May 8	03:10 - 03:57	42
52	EMA	May 8-9	22:36 - 03:00	115
54	FP	May 10	03:11 - 09:26	296
56	FP	May 21	04:08 - 08:48	195
58	FP	May 22	03:36 - 04:45	60
60	FP	May 31	03:36 - 05:00	68
62	FP	June 1	03:27 - 04:41	46
64	FP	June 3	03:40 - 07:31	190

Table 1. Observing Circumstances. In the observer column EMA is Alvarez at OLASU and FP is Pilcher at Organ Mesa.

TROJAN ASTEROIDS OBSERVED FROM CS3: 2014 JANUARY - MAY

Robert D. Stephens
Center for Solar System Studies (CS3)/MoreData!
11355 Mount Johnson Ct., Rancho Cucamonga, CA 91737 USA
RStephens@foxandstephens.com

Daniel R. Coley
Center for Solar System Studies
Corona, CA 92882

Linda M. French
Department of Physics
Illinois Wesleyan University

(Received: 23 June)

Lightcurves for eight Jupiter Trojan asteroids were obtained from the Center for Solar System Studies from 2014 January to May.

The Jovian Trojan asteroids are found in orbits near the stable L4 and L5 Langrange points of Jupiter's orbit. They are thought to have formed further from the Sun and their composition and collisional history appears to be different from main-belt asteroids. The rotation properties of Trojan asteroids are poorly known compared to those of main-belt asteroids. The lower albedo and greater distance of the Trojans makes them more difficult to observe. Here we report lightcurve data for 8 Trojans. Most are in the 50 – 100 km diameter size range, many of which were observed to collect data for future pole solutions and shape models.

All images were made with a 0.4-m or two 0.35-m SCTs with a FLI-1001e, a SBIG STL-1001E or a SBIG ST-9E CCD camera. Images were unbinned with no filter and had Master flats and darks applied to the science frames prior to measurement. Measurements were made using MPO Canopus, which employs differential aperture photometry to produce the raw data. Period analysis was done using MPO Canopus, which incorporates the Fourier analysis algorithm (FALC) developed by Harris (1989). Night-to-night calibration of the data (generally < ±0.05 mag) was done using field stars converted to approximate Cousins V magnitudes based on 2MASS J-K colors (Warner 2007). The Comp Star Selector feature in MPO Canopus was used to limit the comparison stars to near solar color.

624 Hektor. As one of the brightest Trojans, Hektor has been observed a number of times. All reported results have a synodic rotational period of around 6.92 h. This year it was undertaken as a "Full Moon" project and the period found is consistent with those results. Marchis (2006) reports that Hektor is a binary and the primary is an ellipse with major and minor axes of approximately 350 km by 210 km. It has a satellite about 10 km in diameter orbiting about 600 km distant (Marchis 2014).

911 Agamemnon. The authors observed Agamemnon twice before (French 2012, Stephens 2009) and undertook observations this year in hope of getting sufficient data for a shape model in the future. This year's results are similar to those past results and that obtained by Mottola (2011).

1143 Odysseus. Also undertaken as a "Full Moon" project, Odysseus has been previously observed several times. Molnar

Number	Name	2014 mm\dd	Pts	Phase	L_{PAB}	B_{PAB}	Period	P.E.	Amp	A.E.
624	Hektor	04/16-04/17	276	4.9,5.1	184	-8	6.928	0.003	0.29	0.02
911	Agamemnon	03/14-03/15	190	2.4,2.3	181	-10	6.59	0.01	0.21	0.03
1143	Odysseus	02/14-03/13	272	5.4,0.7	171	-3	10.029	0.001	0.15	0.02
2797	Teucer	03/15-03/20	637	2.5,5.4	176	20	10.157	0.003	0.20	0.02
9712	Nauplius	03/09-03/24	308	2.6,0.1,0.6	181	1	19.41	0.02	0.48	0.05
11429	Demodokus	02/04-02/24	518	3.9,2.4,2.7	150	12	50.16	0.06	0.18	0.03
15440	1998 WX4	03/07-03/08	131	4.4,4.5	159	21	-			
15539	2000 CN3	01/29-02/22	639	4.3,3.7,4.4	142	18	46.25	0.03	0.30	0.03

(2008), Mottola (2011) and Shevchenko (2012) all reported results near 10.11 h, in good agreement with this result.

2797 Teucer. The authors observed Teucer before (French 2011) finding a rotational period of 10.145 h. We followed it again this year to obtain data for a future shape model and pole solution. Our result of 10.157 h is in good agreement with our prior result.

9712 Nauplius. Nauplius does not have a previously reported rotational period in the Lightcurve Database (Warner 2014).

11429 Demodokus. Demodokus does not have a previously reported rotational period (Warner 2014).

(15440) 1998 WX4. We attempted to observe this asteroid in 2013 (French 2013) and found a flat lightcurve with no discernable features. That was our experience again this season.

(15539) 2000 CN3. This Trojan does not have a previously reported rotational period (Warner 2014).

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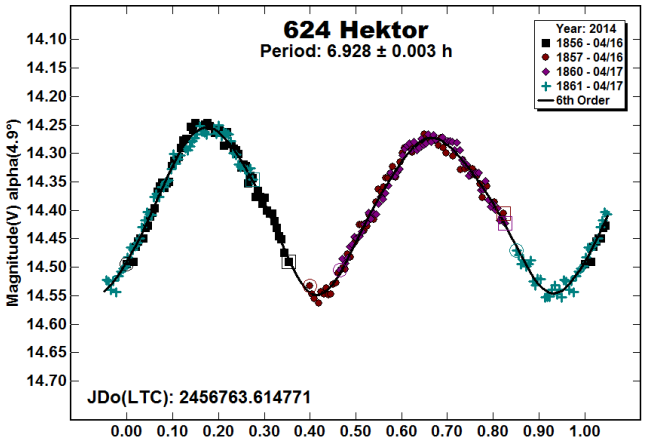
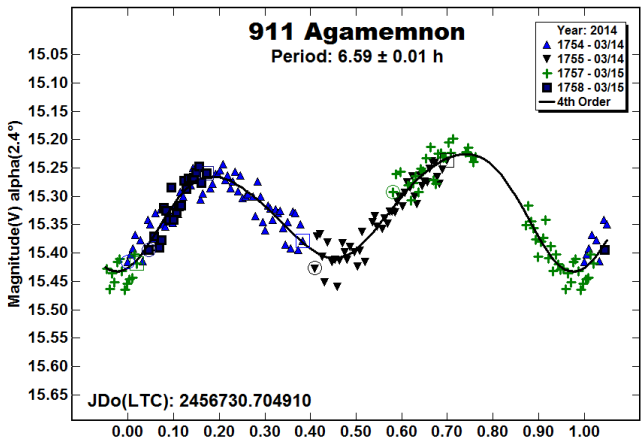
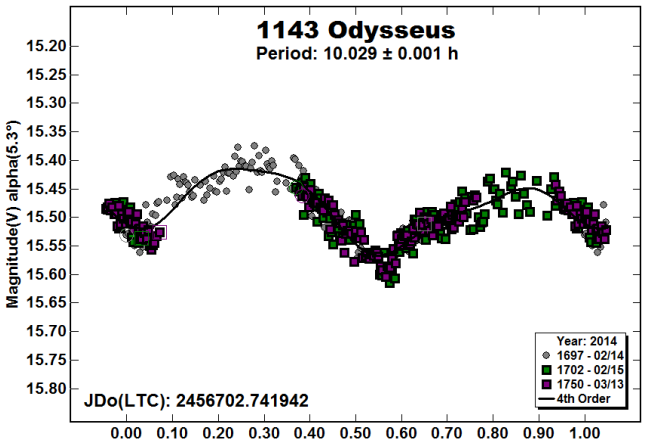
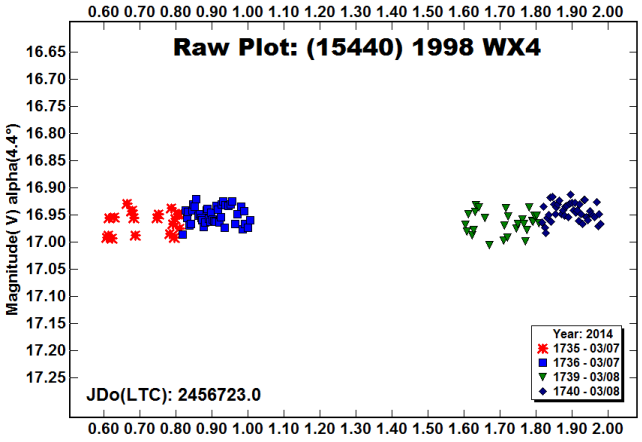
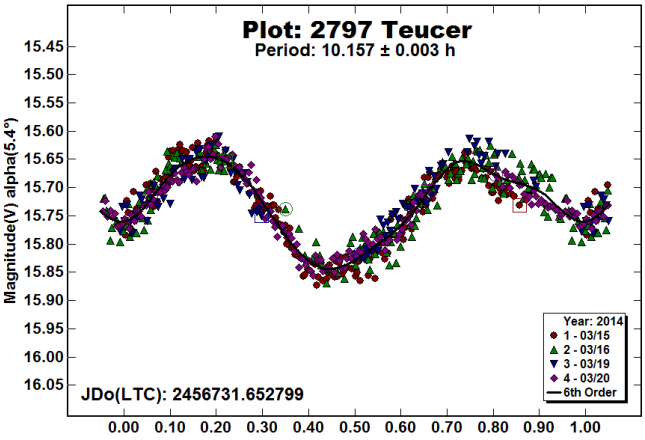
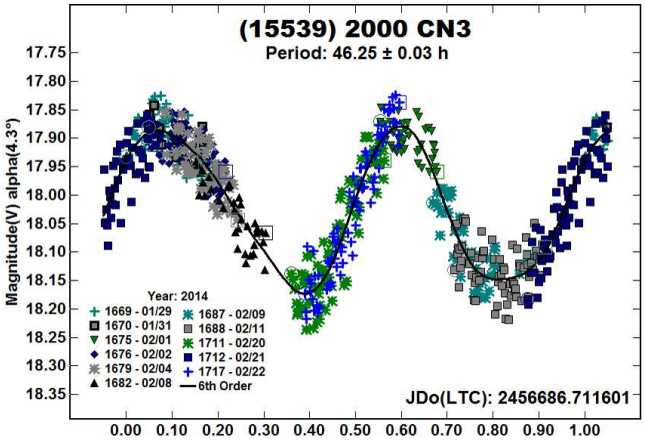


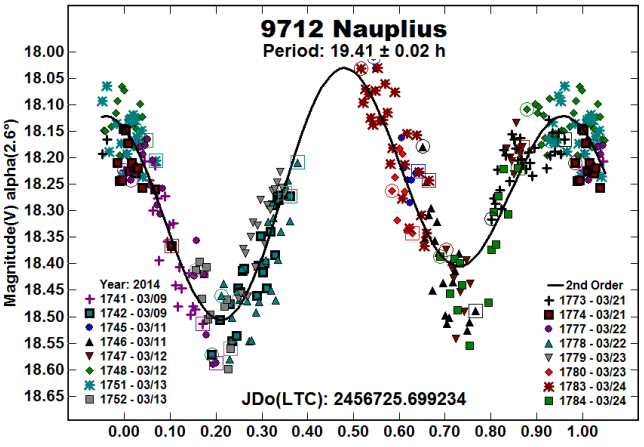


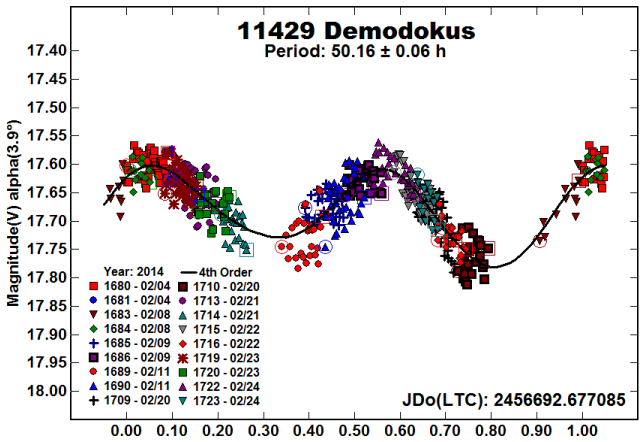

1143 Odysseus
Period: 10.029 ± 0.001 h
Magnitude(V) alpha(5.3°)
Year: 2014
1697 - 02/14
1702 - 02/15
1750 - 03/13
4th Order
JDo(LTC): 2456702.741942


Raw Plot: (15440) 1998 WX4
Magnitude(V) alpha(4.4°)
Year: 2014
1735 - 03/07
1736 - 03/07
1739 - 03/08
1740 - 03/08
JDo(LTC): 2456723.0


Plot: 2797 Teucer
Period: 10.157 ± 0.003 h
Magnitude(V) alpha(5.4°)
Year: 2014
1 - 03/15
2 - 03/16
3 - 03/19
4 - 03/20
6th Order
JDo(LTC): 2456731.652799


(15539) 2000 CN3
Period: 46.25 ± 0.03 h
Magnitude(V) alpha(4.3°)
Year: 2014
1669 - 01/29
1670 - 01/31
1675 - 02/01
1676 - 02/02
1679 - 02/04
1682 - 02/08
1687 - 02/09
1688 - 02/11
1711 - 02/20
1712 - 02/21
1717 - 02/22
6th Order
JDo(LTC): 2456686.711601


9712 Nauplius
Period: 19.41 ± 0.02 h
Magnitude(V) alpha(2.6°)
Year: 2014
1741 - 03/09
1742 - 03/09
1745 - 03/11
1746 - 03/11
1747 - 03/12
1748 - 03/12
1751 - 03/13
1752 - 03/13
2nd Order
1773 - 03/21
1774 - 03/21
1777 - 03/22
1778 - 03/22
1779 - 03/23
1780 - 03/23
1783 - 03/24
1784 - 03/24
JDo(LTC): 2456725.699234


11429 Demodokus
Period: 50.16 ± 0.06 h
Magnitude(V) alpha(3.9°)
Year: 2014
4th Order
1680 - 02/04
1681 - 02/04
1683 - 02/08
1684 - 02/08
1685 - 02/09
1686 - 02/09
1689 - 02/11
1690 - 02/11
1709 - 02/20
1710 - 02/20
1713 - 02/21
1714 - 02/21
1715 - 02/22
1716 - 02/22
1719 - 02/23
1720 - 02/23
1722 - 02/24
1723 - 02/24
JDo(LTC): 2456692.677085