

## **Summary**

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## Assumptions

Discovered 18/01/1975 at Crimean Astrophysical Observatory by Ljudmila Ivanovna Cernych Semi-major axis: 2.7933UA Orbital eccentricity: 0.1126 Orbital inclination: 17.71° Diameter: 30 Km

This minor planet is reported on Minor Planet Bulletin n. 40-2 with period = 10.065 hours, amplitude = 0.63 Mag. and quality code 2+

## Initial data

Analysis was done with measurement taken between 13/05/2013 and 26/05/2013. Observations cover 13 days span. These sessions was included

### Jun 2013

### 2448 Sholokhov rotation time find out



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117 points in 4:20 hours

### Sessions 285 taken 13/05/2013

### Jun 2013

### 2448 Sholokhov rotation time find out

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99 points in 4:15 hours

### Session 286 taken 14/05/2013

### Jun 2013

### 2448 Sholokhov rotation time find out



#### Sessions 287 taken 26/05/2013 arch Level Astr Litilities Pages Help Photo 📾 🕾 🛛 🖻 🔸 🔶 Apertures 11/11/3/11 Refs: 10 Offset: -22.514 SD: 0.038 Sess: 287 5 M R 📰 🕅 🗷 Floating Range 🕫 Raw 🔽 Fourier 🔽 Use Xfrm 5 Mir 10.0655000 Siz 0.00100000 ŝ Period (reg) Orders Period (auto) Fixed Range Period: 10.0655 R Mag 1 Bin Steps Max. Dif +0.00000 63 Range Tind 1 **Raw Plot: 2448 Sholokhov** Year: 2013 287 - 05/26 -0.20 -0.15 -0.10 Magnitude alpha(14.4°) -0.05 0.00 0.05 0.10 0.15 0.20 0.40 0.45 0.35 0.50 JDo(LTC): 2456439.0 0.000000 ± 0.000000 d 🛫 🔤 Time of Maximum Calculator Points: 79 Period: 10.06550 PE: ±0.00100 RMS: 2.2164 Active Session/Observation Files: PHSESS / PHOBSS

79 points in 4:20 hours

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# Analysis

A first check was done with all raw values.



Sessions from 285 to 286 have a good catalog check.

From single night measurement is clear period should be more than 4 hours if monomodal and 6 hours if bimodal.

A first analysis was done in the range between 4 and 24 hours with step 0.01. This is period spectrum.



It show possible rotation time at: 6.6, 10, 14.5, 18

An analysis in the range between 6.0 and 7.0 hours with step 0.001 shows this phase diagram.

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Good correlation

An analysis in the range between 9.0 and 11.0 hours with step 0.001 shows this phase diagram.

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Good correlation.

An analysis in the range between 14.0 and 15.0 hours with step 0.001 shows this phase diagram.



Three modal solution not good.

An analysis in the range between 17.5 and 18.5 hours with step 0.001 shows this phase diagram.



Three modal solution not good.

### 2448 Sholokhov rotation time find out

First and second solution have a good correlation, the second one is a little bit better and is congruent with previous observation. However analysis is suffering of undersampling. Session 285 and 286 don't show oversampling and have a good catalogue check so we decided to leave delta compensation zero on these.

Sessions 287 delta comp is moved in order to find the RMS minimum search playing around its delta comp.

At the end of this activity session 287 comp sessions is 0.60 Mag With this phased plot.



Diagram shows 10.062 hours period.

## Conclusion

2448 Sholokhlov. It was selected from "Lightcurve Photometry opportunities: 2013 April-June" *Minor Planet Bulletin 40*. With period = 10.065 hours, amplitude 0.63 Mag. and quality code 2+. This period was based on Brian D. Warner observation reported on *Minor Planet Bulletin 32* January-March. It was been observed for 3 nights covering 13 days span. Amplitude was lower than Warner observation but our observation seems confirm period. A good correlation was be found on period P =10.062 hours with amplitude *A* =  $0.252 \pm 0.03$  Mag.