

This article was downloaded by:[Bochkarev, N.]  
On: 14 December 2007  
Access Details: [subscription number 746126554]  
Publisher: Taylor & Francis  
Informa Ltd Registered in England and Wales Registered Number: 1072954  
Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Astronomical & Astrophysical Transactions

### The Journal of the Eurasian Astronomical Society

Publication details, including instructions for authors and subscription information:  
<http://www.informaworld.com/smpp/title~content=t713453505>

#### On the date when Christianity became the state religion of Georgia

M. SH. Gigolashvili <sup>a</sup>; R. I. Kiladze <sup>a</sup>; V. J. Kukhianidze <sup>a</sup>; G. T. Ramishvili <sup>a</sup>  
<sup>a</sup> E. Kharadze National Astrophysical Observatory of Georgia, Tbilisi, Georgia

Online Publication Date: 01 August 2007

To cite this Article: Gigolashvili, M. SH., Kiladze, R. I., Kukhianidze, V. J. and Ramishvili, G. T. (2007) 'On the date when Christianity became the state religion of

Georgia', *Astronomical & Astrophysical Transactions*, 26:4, 199 - 200

To link to this article: DOI: 10.1080/10556790601135398

URL: <http://dx.doi.org/10.1080/10556790601135398>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article maybe used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

## On the date when Christianity became the state religion of Georgia

M. SH. GIGOLASHVILI\*, R. I. KILADZE, V. J. KUKHIANIDZE and  
G. T. RAMISHVILI

E. Kharadze National Astrophysical Observatory of Georgia, Kazbegi Avenue 2a,  
0179 Tbilisi, Georgia

(Received 10 October 2006)

In the Georgian chronicles it is specified that the acceptance of Christianity in Georgia is connected with the fact that, during a hunt, King Mirian suddenly became aware that it was dark and that the Sun had disappeared from the sky. Accordingly, it is considered that Christianity in Georgia was announced to be the state religion after this event in the fourth century. In the 1930s the well-known Georgian historian Ivane Javakhishvili asked astronomers to answer the question of whether there was a solar eclipse in Georgia in the fourth century or not. Now we have found that a total solar eclipse occurred in Georgia on 6 May 319 AD.

*Keywords:* Eclipse; Georgia; Christianity

At present it is considered that Christianity was announced as the state religion in Georgia in approximately 326 AD, during the reign of King Mirian and Queen Nana. In the Georgian chronicles [1] it is specified that this event is connected with the acceptance of Christianity by King Mirian, who was out hunting between the cities Mtskheta (the ancient capital of Georgia) and Khashuri near the mountain Tkhoty in dense woodland. It rapidly became dark and the Sun disappeared from the sky. Mirian began to ask his own traditional heathen (pagan) gods about this, but to no avail. Then he addressed the god who Nino from Kapadokia believed in (subsequently she became the sacred Santa Nino, the woman whose name is inseparably connected with the spread of Christianity in Georgia) and there was a miracle; the darkness suddenly disappeared and the Sun began to shine in the sky. Then Mirian turned to the east and thanked 'Nino's god'.

In the 1930s the well-known Georgian historian Ivane Javakhishvili asked Georgian astronomers to answer the question of whether there was a solar eclipse in Georgia in the fourth century or not. Based on the famous *Canon der Finsternisse* of Oppolzer [2], in which

---

\*Corresponding author. Email: marinagig@yahoo.com

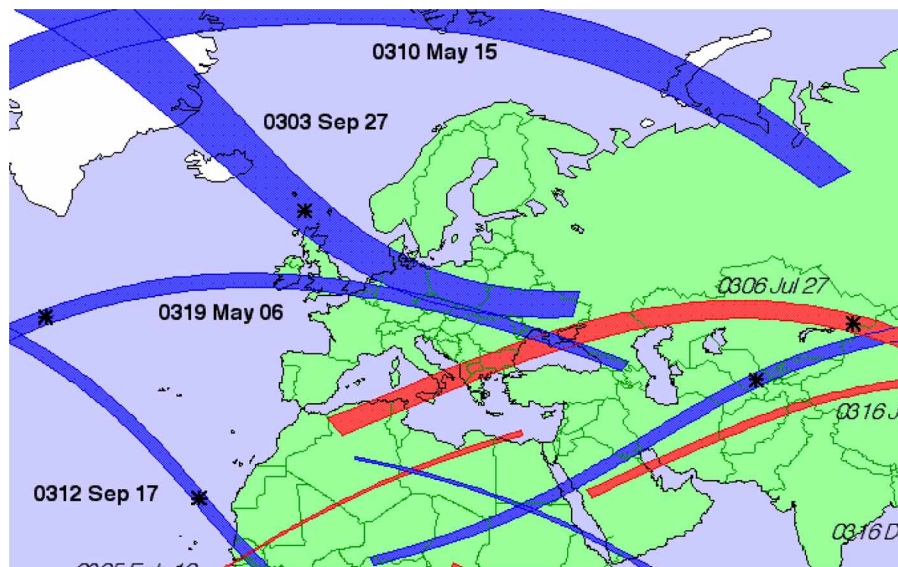


Figure 1. Fragment of the map of the solar eclipses in 301–320 AD.

the change in the length of the day with the current time (the result of tidal friction) is not completely taken into account, astronomers did not find any eclipse during the interesting period. Thus this question has been resolved.

However, after detailed maps of solar and lunar eclipses have been provided on the Web by Espenak [3], we found out that a total solar eclipse did indeed occur in Georgia on 6 May 319 AD. Figure 1 shows the paths of total solar eclipses in the years 301–320 AD.

By our calculation of the circumstances of the eclipse using improved Bessel elements, we have found that the mountain Tkhoty is on the central line of the eclipse. For the place where Mirian was out hunting ( $\lambda = 44^{\circ}.55$ ;  $\varphi = +41^{\circ}.99$ ), the circumstances of the eclipse are as follows. The start of the partial eclipse was at 14:58:01 Universal Time (UT); the second contact was at 15:51:57 UT; the third contact was at 15:53:50 UT; the maximal phase was 1.018. The moments of the sunsets are as follows: bottom edge, 15:59:24 UT; top edge, 16:02:29 UT.

The central line of the eclipse passed through the settlements Tsageri, Ambrolauri, Tskhinvali and Mtskheta. The northern boundary passed along the Caucasian mountain ridge through Elbruses, Upper Baksan and Kazbek. The southern boundary passed through Lake Paliastomi, Abastumani, Aspindza, Dmanisi and Akhtala. From the east the strip of the complete eclipse was limited by a line from Gardabani to Sagarejo.

Hence, the eclipse happened in the evening, before sunset; the duration of the complete phase was about 2 min. At the moment of the maximal phase the height of the Sun above the horizon was only  $0^{\circ}.8$  and the sunset began 5.6 min after the third contact.

Taking into account the mountainous character of the district, it is necessary to assume that possibly Mirian could not see the Sun at the moment of the second (and especially the third) contact and saw only the sudden approach of darkness and its end.

Thus, we have managed to answer a question put 70 years ago by the Georgian historian Ivane Javakhishvili about the occurrence in Georgia of a total solar eclipse in the fourth century; such an eclipse occurred only on 6 May 319 AD.

Soon after this date, Christianity became the state religion of Georgia.

## References

- [1] S. Kaukhchishvili (Editor), *Kartlis Tskhovreba*, Vol. 1 (Sakhelgami, Tbilisi, 1955), pp. 108–111 (in Georgian).
- [2] Th. von Oppolzer, *Canon der Finsternisse* (Kaiserlich-Königlichen Hof- und Staatsdruckerei, Wien, 1887), pp. 146–149, Blatt 73.
- [3] F. Espenak, NASA eclipse home page. Available online at: <http://sunearth.gsfc.nasa.gov/eclipse/eclipse.html> (July 2003).