



Planetary Research Team



Extrasolari Live!



Crab Nebula Association



COELUM Astronomia

XO-2b transit on 6th February 2008: test results.

By Angelo Angeletti

In order to prepare live public observation of XO-2b transit on 27th February next, in the evening of 6th February last some test were effected. Unfortunately bad weather strongly influenced the relative results, so we have only three shootings: Hubert Bousseir from St Saturnin-les-Avignon a Vaucluse Observatory in France, Gilberto Forni and Valentino Luppi from San Giovanni in Persicelo (BO) Observatory and Fabio Zucconi together with his friends Gianluca Manenti, Tiziano Ceccoli, Angelo Marconi from GAM42 Astronomical Observatory / Mairago (LO). To be also underlined the live web transmission broadcasted from Libbiano Astronomical Center in Peccioli (PI): it should have been the first test to try transit live broadcasting on the web, but it was not possible cause of cloudy weather. Alberto Villa together with his Peccioli's friends anyway transmitted the test (successfully) showing on the web the generation of the 24 January last XO-2b transit light curve obtained using software TReI^[1] and commenting upon it and upon procedures also in English language. Libbiano team promised to try again with XO-2b transit on 14th February, being possible to link up their web site <http://astrofiliatvaldera.com/live/live.html> or to COELUM web site www.coelum.com.

EXTRASOLAR LIVE! project is getting to the heart of the matter. There are only few weeks to the great evening having the purpose to approach the large public to the live watching of extra solar planet XO-2b. On Wednesday 27th February 2008 - starting from 9.00 p.m. - many Italian and foreign Observatories will place their instrumentation at public disposal to "observe" the planet, as large as Jupiter and taking 2 days and 15 hours to orbit - at the distance of 5,5 millions Km - around its star that is located in the Linx constellation 500 light years far from us: this star looks like the Sun, being only a little younger. The planet will pass through the disk of its proper star, causing a little eclipse we are possible to perceive from Earth.

Extra solar planet research began in 1995: at the moment we can enumerate 271 successes. Certainly we are speaking about giant planets very close to their star, but we can suppose to find also planets looking like Earth and dreaming of extraterrestrial forms of life is an obvious consequence.

The discovery of Earth size extra solar planet should have enormous philosophic and cultural implication, so strong to justify capitals mankind is actually investing in this kind of research. Also an astronomy lover holding a convenient instrumentation (nowadays rather widespread) is possible to give his perceptible contribution to this kind of research. In the web site www.crabnebula.it you can find all material allowing to "see" an extra solar planet transit: Planetary Team began to make this kind of observation on Summer 2007.

[¹] TReI is an automatic procedure used to shoot a transit showing the obtained light curve. This software has been prepared by Fabiano Barabucci together with Monte d'Aria Observatory's friends. In the web site of Associazione Astrofili Crab Nebula (www.crabnebula.it) you can download a new software release, modified in compliance with several users requests.

Municipal Astronomical Osservatory S.Giovanni in Persicelo (BO) – Italy

Authors: Gilberto Forni e Valentino Luppi

Instrumentation:

- Telescope: Newton 400mm f/5;
- Canon EOS 350D

Shootings:

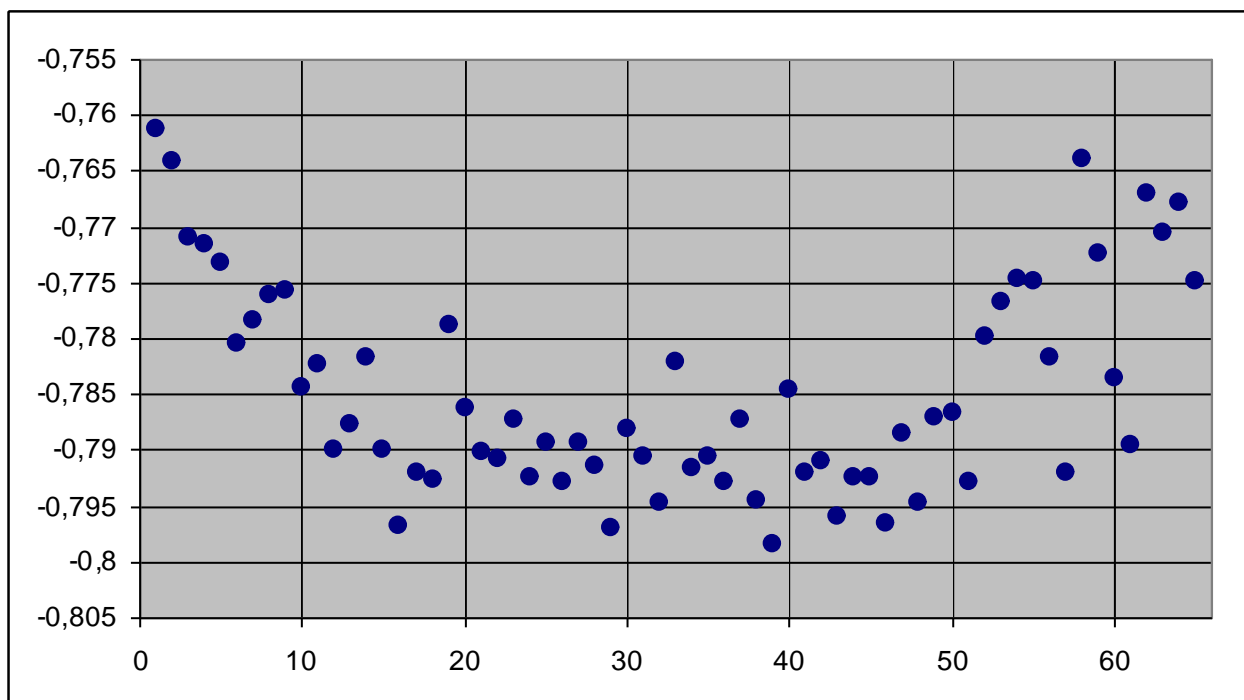
- Calibration: 7 Dark, 7 Bias, 11 Flat.
- Transit images: 65 integrations at ISO 400 (90" exposure time, spaced out 90"). Starting at 22.26 UT – 6th February / end at 01.42 UT – 7th February.

Processing software: IRIS

REMARKS: very interesting outcome obtained using a telescope equipped with a standard digital camera!



Light curve:



St Saturnin-les-Avignon Observatory Vaucluse – Francia

Author: Hubert Boussier

Instrumentation:

- Refractor telescope William Optic FLT110, 770mm focal length; f/7
- CCD Atik 16 HR
- Guida in parallelo con rifrattore Bresser da 70 mm, f/10 con CMOS PL1-M 1.3Mp

Shootings:

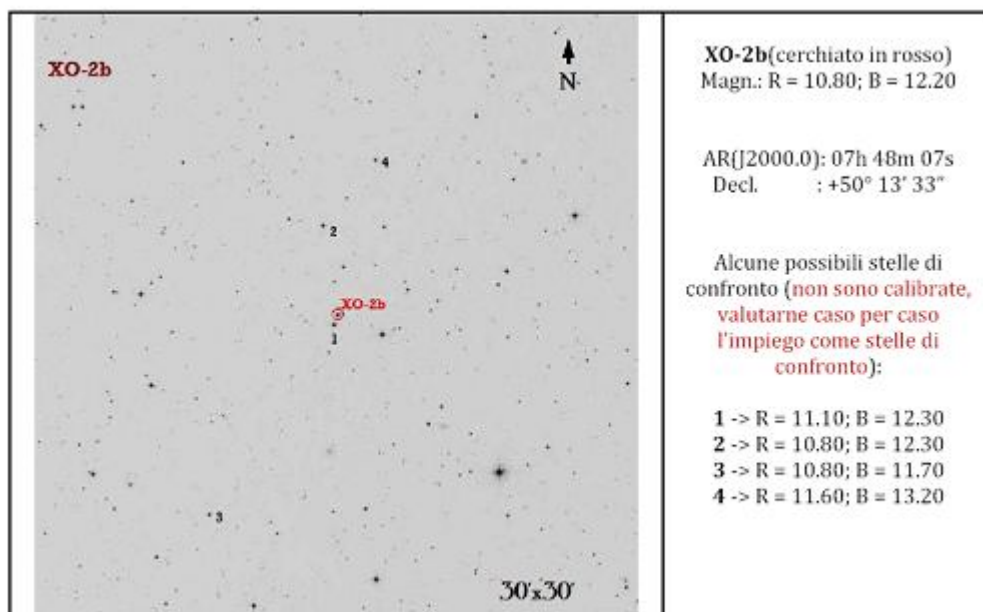
- Calibration: 50 Flat Fields / 1,8 sec. exp. + 15 Bias + 16 Dark Frames / 90 sec. exp.
- Transit images: 185 integrations, 90" exposure time (start at 22:02:35 UT, end 03:28:39). An Astromik red filter was used, putting the image a little out of focus.



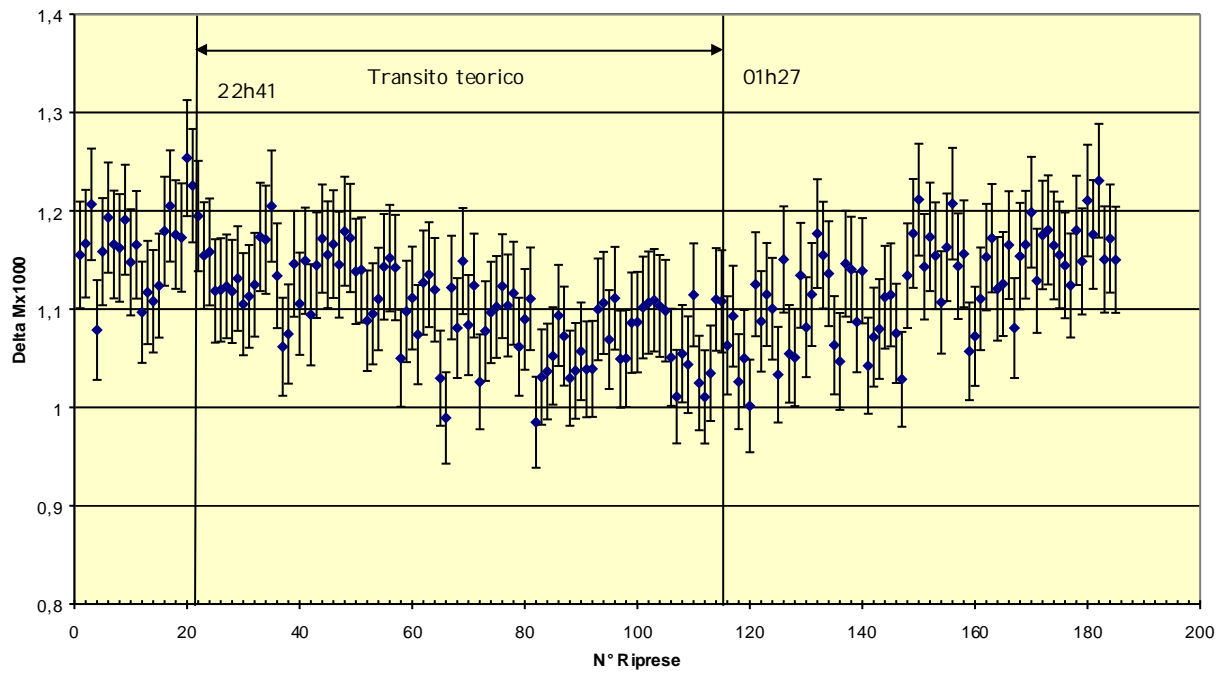
Processing software: IRIS 5.40

NOTE: integrations automatically taken: the author was at the Observatory only at the beginning of the event. The author says: “It seems there is a few minutes phase displacement from expected transit time and real transit time, as already noted on 30th November 2007.”

Light curve: Reference stars: 1, 2, 4, 3; light curve processed using IRIS



Curva di Luce XO-2b 06/02/2008



Astronomical Observatory Lodigiano Mairago (LO) – Italy

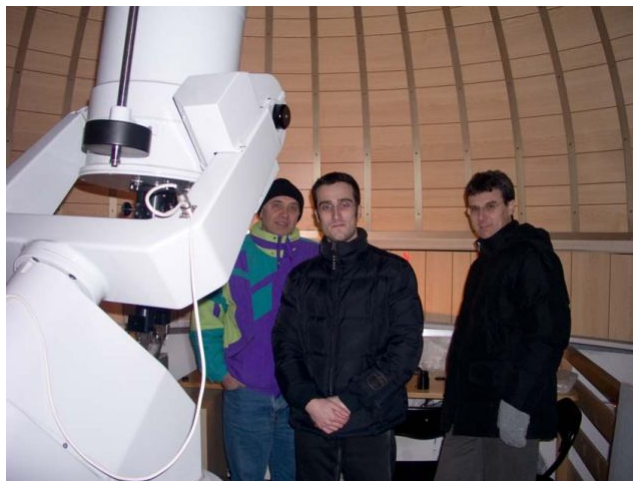
**Authors: Fabio Zucconi, Gianluca Manenti, Enrico Tamagni e Tiziano Coccoli
del Gruppo Astrofili M42**

Instrumentation:

- Telescope: Schmidt Cassegrain 300 mm diameter, f/10
- CCD Starlight Xpress Mx7C at binning 2x2 bw to remove colours matrix obtaining better photometric analysis.

Shootings:

- Calibration: not specified.
- Transit images: 60 sec exposure time, starting at about 22 UT



Processing software: Maxim DL (no TRel)

REMARKS: seeing was not good, and we put the image a little out of focus. We had clear sky during all transit period. We used 3 reference star for data processing.

Curva di luce:

