



ExoClock Newsletter

Dear ExoClock participants,

we hope that you are doing well and enjoying the summertime!

First of all, we are welcoming the new members! To engage with the community, we sent out a newsletter like this at the beginning of every month and we hold a regular meeting on the last Thursday of every month. You can read the past newsletters, watch the past meetings, and have access to other educational material at:

www.exoclock.space/users/material

We also organise meetings dedicated to new ExoClock members. These meetings are held on the Friday just after our regular monthly meeting, and they are not recorded. In these meetings, newcomers have the opportunity to ask questions of any level related to the operation of the website, observations of transits, data analysis etc.

Finally, we have a Slack channel for more direct communication and if you want to join, please send a request at exoclockproject@gmail.com.

In this newsletter, we discuss:

- 1. ExoClock virtual meeting – August 2021**
 - 1.1 Announcements**
 - 1.2 Website updates**
 - 1.3 Working groups updates**
- 2. 1st Annual ExoClock meeting – dates – remember to register!**
- 3. Highlighted observations**
- 4. ALERTS**

1. ExoClock virtual meeting – August 2021

Thank you all for attending the meeting! For those who could not make it, this meeting, together with all the previous ones, is accessible from:

www.exoclock.space/users/material

Here we briefly share the main points that were discussed during the meeting:

1.1 Announcements

○ **Introducing a new reviewer of your light curves - Georgia Pandelidou**

Georgia is a graduated physicist with a professional interest on exoplanets. She has started supporting us with the reviewing process of observations. From now on your observations will be reviewed by her, too. That means you might see her signing some of the messages with feedback or acceptance of the observations.

Georgia, welcome to our team!

○ **Twinkle space mission**

In this meeting we discussed the possibility of expanding the use of ExoClock to other missions/projects apart from Ariel. One such space mission is Twinkle, for which you can find more information here:

<https://www.twinkle-spacemission.co.uk/>

We had a relevant presentation and discussion with Marcell Tessenyi, CEO of BSSL and Billy Edwards, Project Scientist of Twinkle and member of the ExoClock coordinating team. You can watch the presentation for the Twinkle space mission as part of the meeting recording. After the discussion, we had a voting process to decide whether we will expand the ExoClock use and include more targets in the list. For those who could not attend, please send us your opinion and any feedback you might have at exoclock.project@gmail.com about expanding ExoClock to Twinkle.

If you have questions about Twinkle, feel free to send them to the project scientist Billy Edwards at:

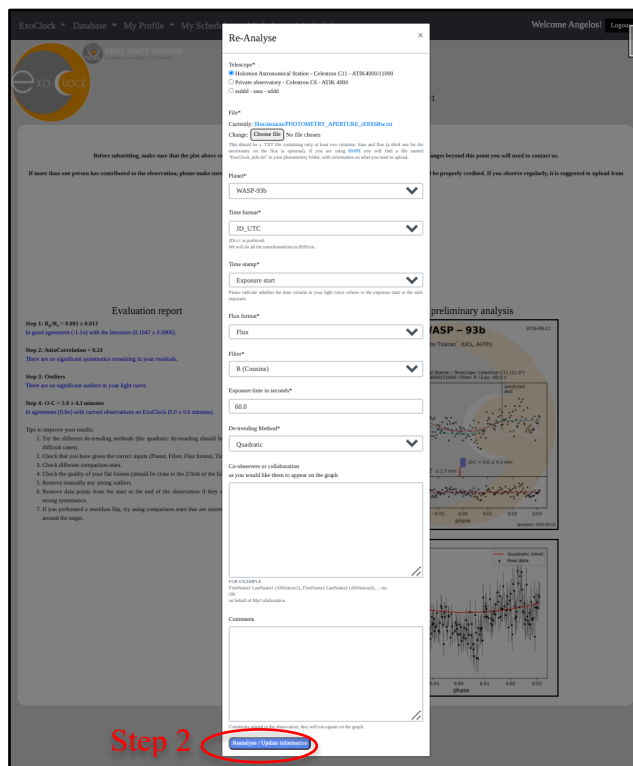
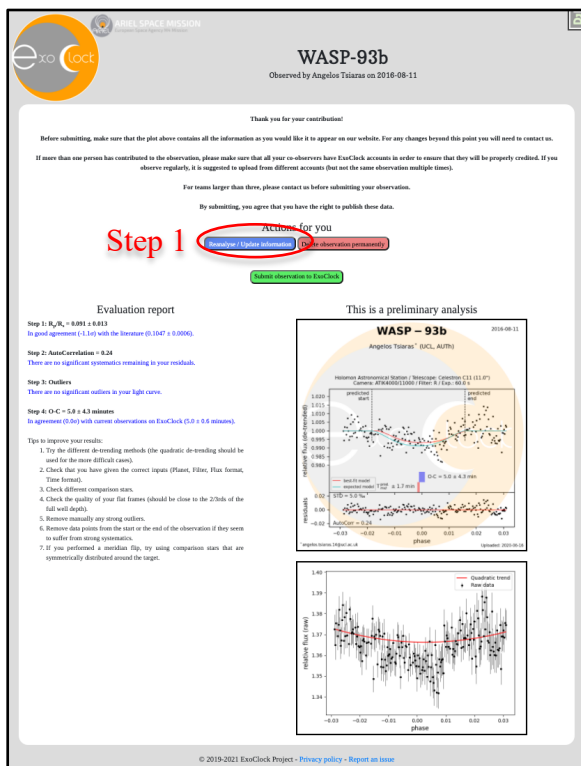
billy.edwards.16@ucl.ac.uk

1.2 Website updates

○ **Upload page / Reanalysis**

We have updated the website interface regarding the re-analysis step after uploading an observation, making it a two-step process. After uploading an observation, you will see a page like the one below, where the action buttons have been moved up. If you want to perform a re-analysis or change the uploaded file you will need to press the “Reanalyse” button (step 1). A pup-up window will appear

with the analysis options. There you can change any of the information and press the “Reanalyse” button (step 2).



○ Large O-C drifts in the scheduler

Due to the large number of planets with large O-C values detected so far we are now including this drifts in the scheduler (for O-C values greater than 10 minutes). This means that if there is an observation indicating a 30 minutes drift, the scheduler will automatically suggest you to observe 30 minutes later than the ephemeris prediction. These predictions will be marked on the scheduler accordingly. An example can be seen below.

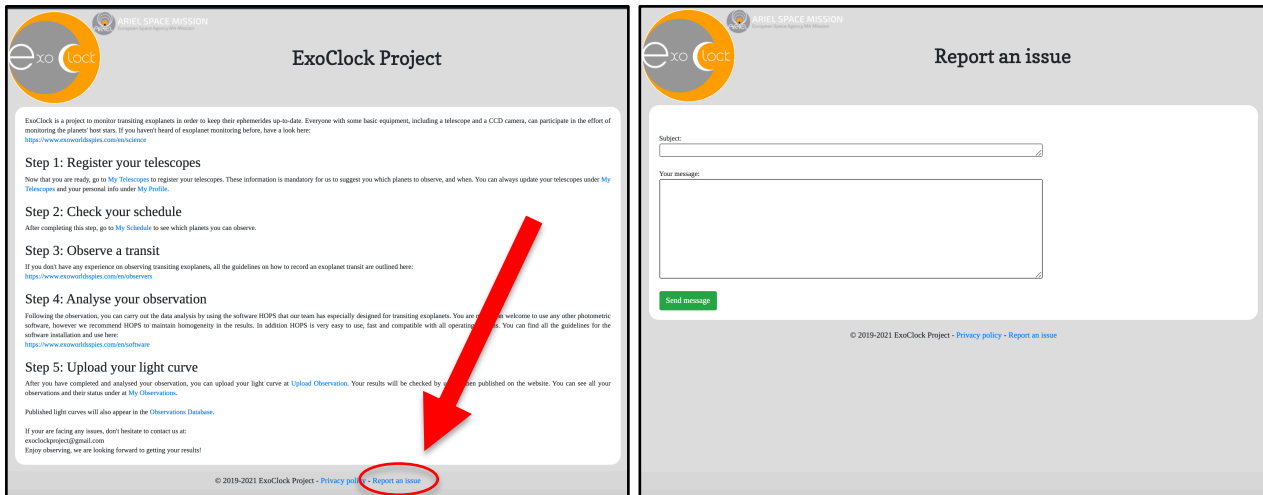
<p>WASP-29b</p> <p>Observ. Priority: ALERT</p> <p>Total obs. (Recent): 4 (0)</p> <p>O-C minutes: -18.6±0.5</p>	23:51:31.0840	10.896	13.36	2.63	<p>DRIFTING EPHEMERIS NOTICE: a drift of -18.6 minutes has been applied to this prediction.</p> <table border="1"> <thead> <tr> <th>2021/08/08</th> <th>2021/08/08</th> <th>2021/08/08</th> <th>2021/08/08</th> <th>2021/08/08</th> </tr> </thead> <tbody> <tr> <td>16:28</td> <td>17:28</td> <td>18:46</td> <td>20:05</td> <td>21:05</td> </tr> <tr> <td>Alt: 42°</td> <td>Alt: 46°</td> <td>Alt: 50°</td> <td>Alt: 54°</td> <td>Alt: 55°</td> </tr> <tr> <td>Azi: 88° (E)</td> <td>Azi: 73° (E)</td> <td>Azi: 51° (NE)</td> <td>Azi: 27° (NE)</td> <td>Azi: 7° (N)</td> </tr> </tbody> </table> <p>Max counts increase during observation: R:3% V:5%</p> <p>Moon illumination: 0.2%, Moon distance: 142.9°</p>	2021/08/08	2021/08/08	2021/08/08	2021/08/08	2021/08/08	16:28	17:28	18:46	20:05	21:05	Alt: 42°	Alt: 46°	Alt: 50°	Alt: 54°	Alt: 55°	Azi: 88° (E)	Azi: 73° (E)	Azi: 51° (NE)	Azi: 27° (NE)	Azi: 7° (N)
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-39:54:24.259																									

○ More targets in your scheduler

We have adjusted the transit SNR limit from 15 to 10 for observers that have a large number of light curves on the website. In this way you will see a small increase in the number of planets that you can have access. You will not see any obvious change in the scheduler

- **Reporting issues**

To better organise our workflow and respond more quickly to your requests we have created the “Report an issue” page on the website and we could really appreciate it if you could notify us about any issues or any difficulties you have through there. The link is at the bottom of every page:



1.3 Working groups updates

- **Synchronous Observations Working Group** coordinated by Alessandro Nastasi

The synchronous observations working group is trying to establish a strategy for simultaneous observations by observers of different locations. The main objective is to improve the S/N ratio and detect shallower transits with smaller size telescopes. You are welcome to participate in the campaigns that the group organises. The campaign for August is shown here:

<https://docs.google.com/spreadsheets/d/1rkvcYP3-u8avfQAv9vERSaZIDxIIINegsvg0btFpJs5g/edit#gid=1890913532>

If you are interested and available to observe any of the provided transits, please fill in the above spreadsheet

- **CMOS Working Group** coordinated by Roland Casali and David Rees

It would be really appreciated if you could read the document that the group has created for CMOS cameras. Please send your comments / questions to us!

You can read the document here:

https://www.exoclock.space/cmox_testing_campaign

2. 1st Annual ExoClock meeting - dates

We would like to establish an annual ExoClock meeting (currently online) where you will have the chance to share your work related to exoplanets, and as a community we will have the opportunity to interact more. We are thinking of arranging separate sessions for observing, data analysis and theory in order to have more dedicated discussions. You are welcome to join any part you want based on your interests/time and you are invited to also present your work/ observatory. Certainly, it will be a good place for the working groups to share their work so far and get some feedback. Additionally, we will have invited speakers/ scientists from the Ariel working groups and you can indicate the topics that you would like to hear about.

We decided that the most suitable dates for organising the meeting are within September, together with the beginning of the academic year. Please note these dates:

25th & 26th of September

You can register through this link:

<https://www.eventbrite.co.uk/e/1st-annual-exoclock-meeting-tickets-161901468651>

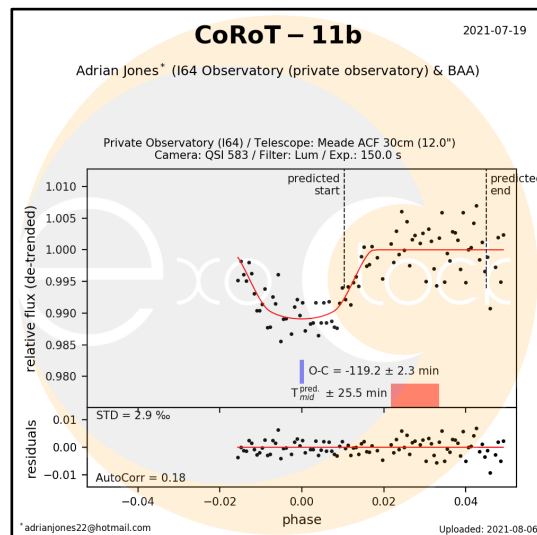
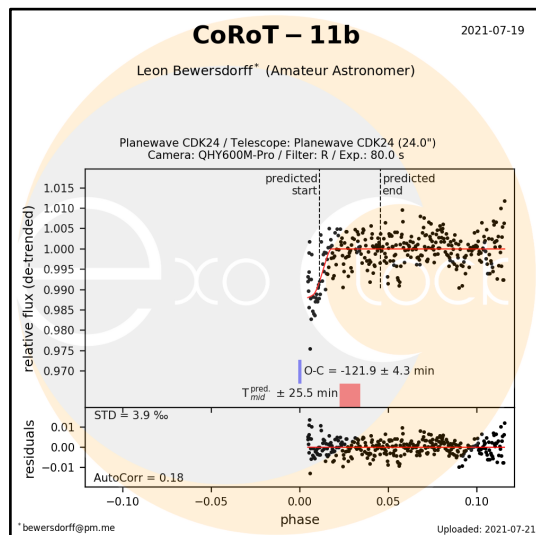
you can also:

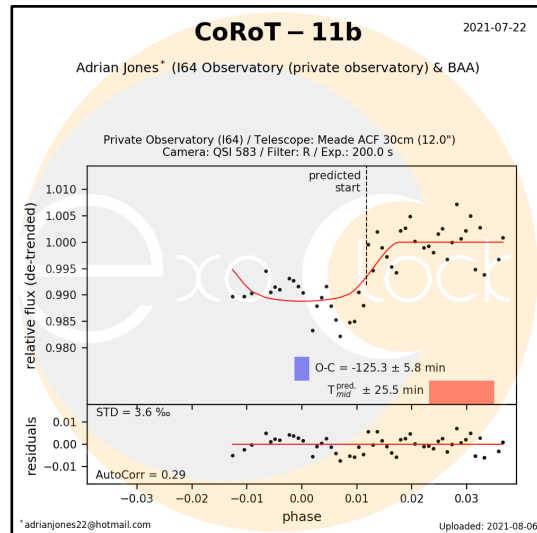
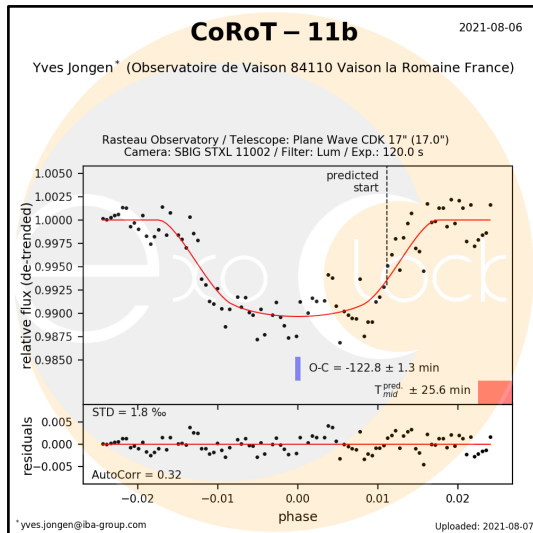
- **suggest a presentation by you for your observatory or any other related topic**
- **suggest themes and sessions,**
- **suggest topics for talks by invited speakers**
- **suggest ideas for activities during the meeting**

Please distribute this to people you think they might be interested. The meeting can be attended by anyone interested in learning about exoplanets or joining ExoClock.

3. Highlighted observations

We received many observations which we can highlight, thank you everyone. For this month, we have selected **CoRoT-11b**. A shift of **~2 hours** (wow!) was initially identified by Adrian Jones and Leon Bewersdorff on the 19th of July. More recent follow up observations by Yves Jongen and Adrian Jones confirmed this shift. Below you can see the light-curves. Congratulations for your efforts!





4. ALERTS

Please check your personalised alert schedule at:

www.exoclock.space/schedule/alerts

for the **ALERT** planets and if you get a clear sky and a long-enough night, you can try observing them! The following targets are in the current **alert system**:

- WASP-7b
- WASP-20b
- WASP-63b
- WASP-94Ab
- WASP-100b
- WASP-156b

We remind you that many targets were not in the alert list, before an unexpected shift was identified by you, the ExoClock participants. This highlights the importance of observing targets that are also of low and medium priorities.

Clear Skies,
the ExoClock team