Issue 13 – Jan 31, 2021

ExoClock Newsletter

Dear ExoClock participants,

we hope that you are all doing well! This is the first newsletter for 2021, again we wish you clear skies and a year full of positive moments. Despite the poor weather conditions during the past month, we have received around 50 observations, many thanks to all of you for your continuous efforts!

For this newsletter, these are the main updates we are discussing:

1. Progress on HOPS version 3

We would like to thank all of you who have helped us with the beta release of HOPS v3. As we are in the progress of preparing the documentation but in the meantime more of you expressed an interest in testing version 3. For this reason, version 3 is now on GitHub, in case you want to test it:

https://github.com/ExoWorldsSpies/hops-3.0

For any comments (installation problems, bugs or suggestions, please use the GitHub issues page:

https://github.com/ExoWorldsSpies/hops-3.0/issues

2. ExoClock virtual meeting – January 2021

This meeting, together with all the previous ones are accessible from:

www.exoclock.space/users/material

During our recent meeting we discussed several topics and here we briefly share some of main points:

- Publications:

A reminder of the links where you can find the first ExoClock publication:

https://ui.adsabs.harvard.edu/abs/2020arXiv201207478K/abstract

All observations & data available at:
https://www.exoclock.space/dra or at https://osf.io/3w7hm

Note that during our meeting on December (the 7th meeting), we presented a summary of the paper and you can watch this if you want to learn more about it.

For our next paper, we will use all the observations submitted the until 31/12/2020 that have been verified or will be verified after improvements. We aim to include ~ 1700 observations of ~200 planets.

We have reviewed almost all the data until that date and some of the observations have been returned to you for resubmission. Those still pending will be checked by tomorrow. Please resubmit any observations soon using the link that is included in our return-notice e-mail. If you delete them and start from scratch, they will not be considered now.

In this paper we are glad to announce that ETD data will be included, too, and this will be the first official outcome of the collaboration between ExoClock and ETD!

- Working groups

We have been discussing the formation of several working groups since last year. With the starting of this new year, we believe it's a good opportunity to start developing these different groups. The ExoClock community consists of people from various backgrounds and the groups have emerged from your ideas and your interests and we are very happy that on the project we are co-creating knowledge.

The scopes of the groups are not the primary goal of the project; however, they can enrich several aspects of performing exoplanet transits and results of their efforts can be widely used by the community to improve observing strategies. There is no timeline and/or pressure for the work of these sub-projects, and of course, they are not affecting the primary goal of ExoClock.

Recently we had our first meetings to discuss in more detail the next steps for each group. The main communication and coordination of the groups will be conducted through Slack where we have dedicated channels. If you are interested to join the Slack and/or one of the groups, please send us an email. The working groups are:

Synchronous Observations Working Group – coordinated by Alessandro Nastasi
- Scope: organise, carry out and analyse observations from different sites simultaneously

Multi-colour Observations Working Group – coordinated by Steve Futcher
- Scope: explore the correlations between colours and transit parameters

CMOS Working Group - coordinated by Roland Casali and David Rees
- Scope: explore testing procedures, setup and performance of CMOS chips in transit observations

Research Working Group (for post-graduate students)
- Scope: investigate the further use of ExoClock data

In addition to these groups, we have formed the *Literature Working Group* which has already started working on collecting and evaluating data from existing publications. The goal of the group is to integrate all the data from publications with all the ExoClock data. The group consists of four university students *Leon Bewersdorff, Georgios Lekkas, Georgia Pantelidou and Themis Poultourtzidis*; they have already completed the first tasks, many thanks to them!

- Educational material

In an effort to enrich your experience of participating in ExoClock, last year we started creating educational material about different aspects of the project. These can be found under the "Further reading" space in the material tab:

www.exoclock.space/users/material

We plan to continue this activity this year and we would like your option on the topics that you would like to get a deeper understanding. Please take a look at your profile page and suggest some specific topics in the new box "**Topics of interest**" and/or update the preferences you have indicated when you initially signed up:

https://www.exoclock.space/users/my_profile/

Your feedback is also vital for us to improve and enrich these topics, so please send us your questions and comments regarding this material!

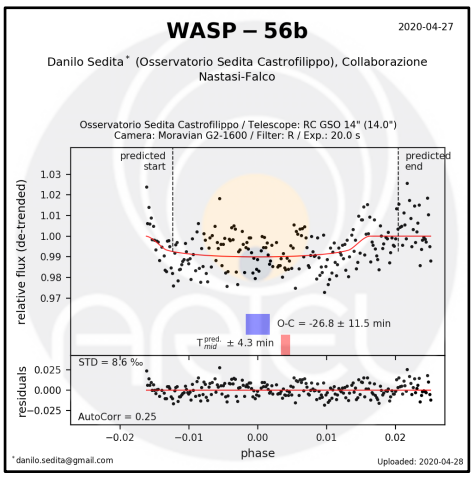
3. Have you done any ExoClock-related outreach activities?

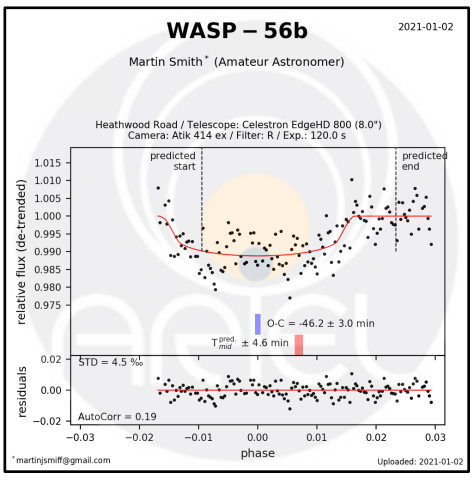
The ExoClock community is growing up and includes people from various backgrounds and countries. To facilitate the communication within and between communities and widen the participation, it is important to organise outreach events and share our common, collaborative, efforts! We strongly encourage you to connect with your local astronomical societies and arrange such activities (even online at the moment) and we are always here to support you if you need help in preparing some material. Please send us your updates if you have organised or participated in an outreach event and we will share this with the community. The outreach activity can be a magazine article, an interview, an online presentation etc.

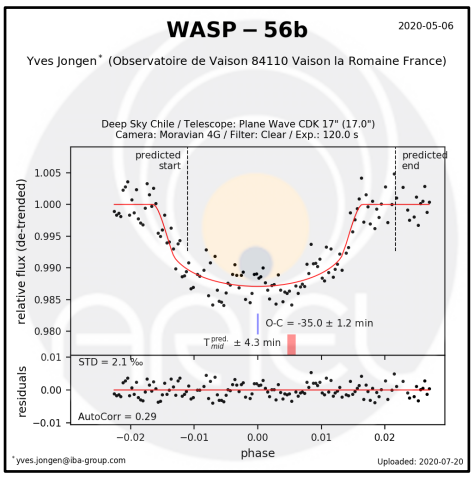
4. Highlighted observations

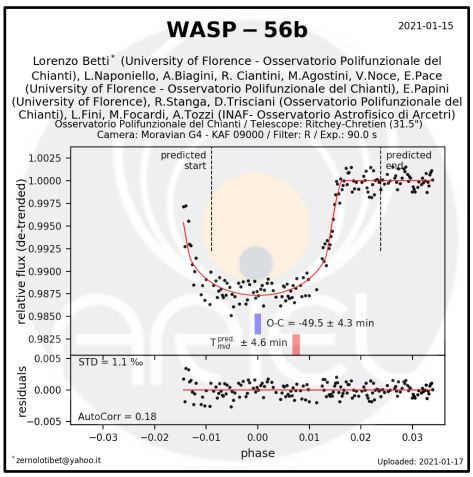
Many thanks to everyone who observed some of the **ALERT targets** during last month!

The alert system is really helping us confirm unexpected shifts which were not detected previously. The detection and the confirmation of these shifts would have not been possible without your excellent collaboration. **WASP-56b** was one recent alert target. A shift of ~27 minutes was initially identified a long time ago by Danillo Sedita – in April 2020. Although the observation has a high uncertainty in the O-C value, it was really important since it was the first that identified the shift. Much more recently, this shift was confirmed with three more observations by Lorenzo Betti, Martin Smith and Yves Jongen. Congratulations everyone for your efforts!









5. ALERTS

The following targets are in the current **alert system**:

- WASP-54b
- WASP-56b
- WASP-65b
- K2-237b
- KELT-14b
- HATS-33b
- HD17156b
- NGTS-2b
- HAT-P-56b
- HAT-P-55b
- HAT-P-40b

Please check your personalised alert schedule at:
www.exoclock.space/schedule/alerts

and if you get a clear sky, and a long night, observe them!

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

Clear Skies,
the ExoClock team

We want your ideas! If you have read our educational material, please send us your comments or questions - it will be very useful for us.

We will be discussing your points during our next meeting.

Don't forget to suggest other topics through your profiles at the link below or just by emailing us:

https://www.exoclock.space/users/my_profile/