



ExoClock Newsletter

Dear ExoClock participants,

we hope that you are doing well!

During February the weather didn't enable to perform many observations in several places. We are also aware of the restrictions to access observatories. But still, some of you managed to get some clear skies and we received almost 70 observations so far, thank you all!

For this newsletter, we are discussing:

- 1. ExoClock virtual meeting – February 2021
 - Logo Campaign -Finalists
 - Publication
 - Working groups updates
 - HOPS Version 3.0
- 2. Diagnostics – how to evaluate your data
- 3. Highlighted observations
- 4. ALERTS

1. ExoClock virtual meeting – February 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:

- ExoClock Logo Campaign

The logo campaign has closed, and we would like to thank all of you for joining the campaign, we really appreciated your contributions! We have announced the three finalists: *Léa Changeat*, *Claudio Lopresti* and *Laura Lewis*, congratulations! We really valued the relevance, the inspiration and the innovation in all three logos.

The three logos have been posted on our website, where you can vote for your favourite one through your account:

https://www.exoclock.space/logo_campaign

The voting will close on the **12th of March (next Friday)**, so please make vote until then! The final winner will be chosen based on the votes of the ExoClock community and the votes of the coordinating team.



by
Léa Changeat



by
Claudio Lopresti



by
Laura Lewis



- Publication - current status:

The upcoming paper we will include all observations that were submitted until 31/12/2020 and have been verified. In total, there are ~ 1700 observations of ~180 planets.

We are now in the final stage of analysing the ExoClock observations so we can start obtaining an image of the planets that will need an update etc. In this paper we will be combining for the first time mid-times from the literature and from ETD. Many thanks to the ExoClock Literature Working Group for collecting and reviewing around 2500 data points!

Additionally, we have added an “Author Information” page where we are kindly asking you to add your name and affiliation(s) as you would like them to appear in publications. You can find the box under the “My Profile” tab through your account:

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

Author Information

Please insert here your personal information,
as you want them to appear in our future publications.

Instructions:

1. Please provide your full first name, full middle name (if applicable) and full surname.
2. If you have more than one first names, middle names, or last names please add all of them in the same field, separated by "-".
3. Add your full affiliation or affiliations, including the full address.
4. If you are an amateur astronomer you can add as affiliation your local association/club with its full address.
5. Alternatively, you can provide the name of your private observatory in the respective field.
6. If no affiliation is provided we will use the term "Amateur Astronomer".

First name(s):

Middle name(s):

Last name(s):

Affiliation 1:

Affiliation 2:

Affiliation 3:

Private observatory:

- Working groups updates

During our recent meeting, members of the working groups gave brief updates on the current status of their work. These are the main points:

Synchronous Observations Working Group – coordinated by Alessandro Nastasi

- A list with the different types of equipment of each member has been created and efforts for initial tests will start soon.

CMOS Working Group - coordinated by Roland Casali and David Rees

- Participants have already conducted several tests with different CMOS models and created a detailed report. A summary with the main points will be presented in the next meeting/newsletter.

Literature Working Group (university students)

- The team has uploaded the mid-times of all planets that will be included in the upcoming publication. More than 2500 data points have been collected from past literature papers and will be integrated with ExoClock observations to refine the ephemerides.

If you are interested in joining the Slack and/or one of the groups, please send us an email.

- HOPS Version 3.0

We would like to warmly thank again all of you who have contributed with your feedback on the beta release of HOPS 3. We have prepared the documentation where you can find step-by-step guidelines for using the new version. The new manual and the code itself can be accessed through the ExoWorldsSpies page:

<https://www.exoworldsspies.com/en/software/>

As promised, we will hold a workshop on how to use this latest version of HOPS this Friday, the 5th of March at 15:00 GMT. At the end of the workshop, you will have also the chance to ask any questions you might have. If you are interested to join, please register via the following link:

<https://ucl.zoom.us/j/99359735174>

2. Diagnostics for evaluating the submitted light-curves

We are considering adding some features in the website which will facilitate the process of evaluating your light-curves. The main diagnostics to evaluate the quality of a light-curve are:

- Rp/Rs
- Autocorrelation
- Noise / STD
- O-C

We think that it would be useful to create an automatic report which will be appearing during the upload stage. With this report, you will know which parts of the analysis can be improved before you

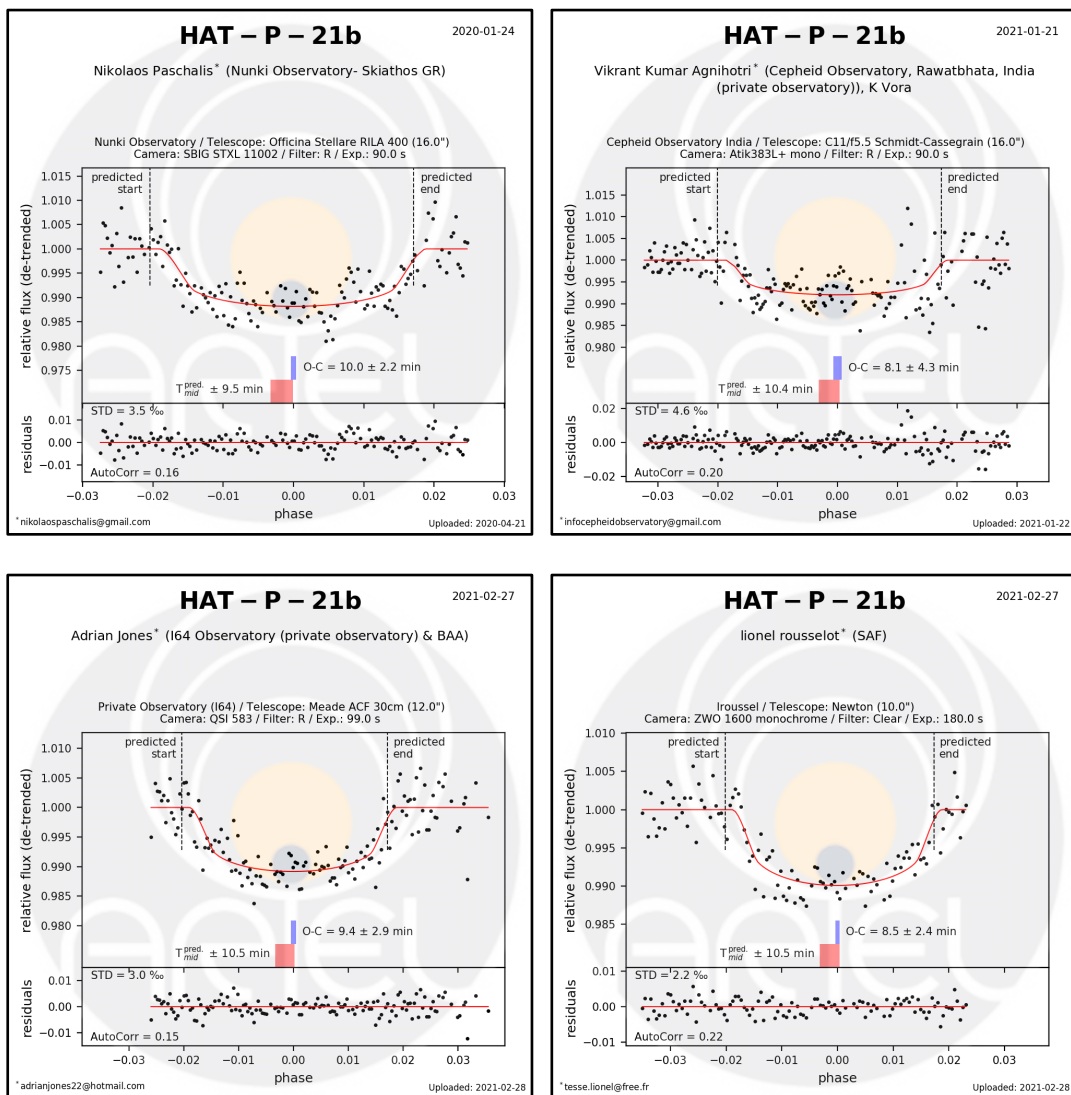
submit your light-curve for the final review by our team. Do you think that this will be something useful? Do you have any other ideas about this evaluation process? We will discuss this thoroughly in the next meeting but in the meantime, you can start thinking about it and you can also email us any ideas you might have.

3. Highlighted observations

Many thanks to everyone who have been trying to observe some of the **ALERT targets** during last month. We are aware that due to lack of clear skies, most alerts were not observed. Therefore, last month's alert targets remain at the list of the current alerts.

HAT-P-21b was one of the highlighted targets during January & February. A shift of **~10 minutes** was initially identified a long time ago by Nikos Paschalis – in April 2020. Although this target was flagged as a low priority target. Recently this shift has been confirmed with more observations by Vikrant Kumar Agnihotri, Adrian Jones, Yves Jongen and Lionel Rousselot – below you can see examples of some of these light-curves.

Congratulations everyone for your efforts!



The example of **HAT-P-21b** highlights again the importance of observing the planets that are flagged as low priority targets. An unexpected shift might emerge throughout your observations.

4. ALERTS

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

- WASP-54b
- K2-237b
- HATS-33b
- NGTS-2b
- HAT-P-56b
- HAT-P-55b
- HAT-P-40b
- KELT-4Ab
- HAT-P-21b

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 you, the ExoClock participants. This highlights the importance of observing targets that are also of low and medium priorities.

Clear Skies,
the ExoClock team

Check this out!

Translation of HOPS 3 manual in other languages

It would be really useful to provide the documentation with the guidelines for HOPS 3 in other languages to facilitate participants from different countries. If you can support us with the translation in other languages, please send us an email at exoclockproject@gmail.com