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Newsletter #134 July 8th 2020

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If the newsletter does not look good in your email, check the pdf here!

News from the front: Engineering Update (Reed Riddle / Richard Dekany)

- For an unknown reason, the P48 windscreen deployed without being commanded, and the failure caused ROS to be unable to observe until the fault was fixed and the windscreen lowered. The windscreen has subsequently been deactivated, as there are no plans for ZTF to use it at this time.
- In celebration of American independence, the ZTF control computer decided to reboot itself spontaneously on July 4th. After confirming that fireworks and alcohol were not at fault, the system was switched over to the backup computer which has been operating since without issue. An extra day was required to get some calibration data from the old control computer for the focuser system, so the focuser did not operate on July 5th (UT) but is now operating normally. The computer fault may be related to a dying BIOS battery, or possibly to overdue maintenance on the computer due to the COVID situation. One of the camera computers also died on June 21, most likely due to a power supply or motherboard fault that rendered it powerless. Two spare computers remain for the system, and the faults for the other computers (which have operated continuously for around five years now) should be easily repairable once the pandemic conditions allow a maintenance visit.
- The guider camera has encountered a fault. The camera itself appears to be fine, so it is most likely in the USB fiber cable that goes up through the telescope from the computer room. This is being investigated currently, but it is likely a new cable will need to be purchased and installed. Guiding is reasonably good for all but the longest exposures so the impact on science should be low.

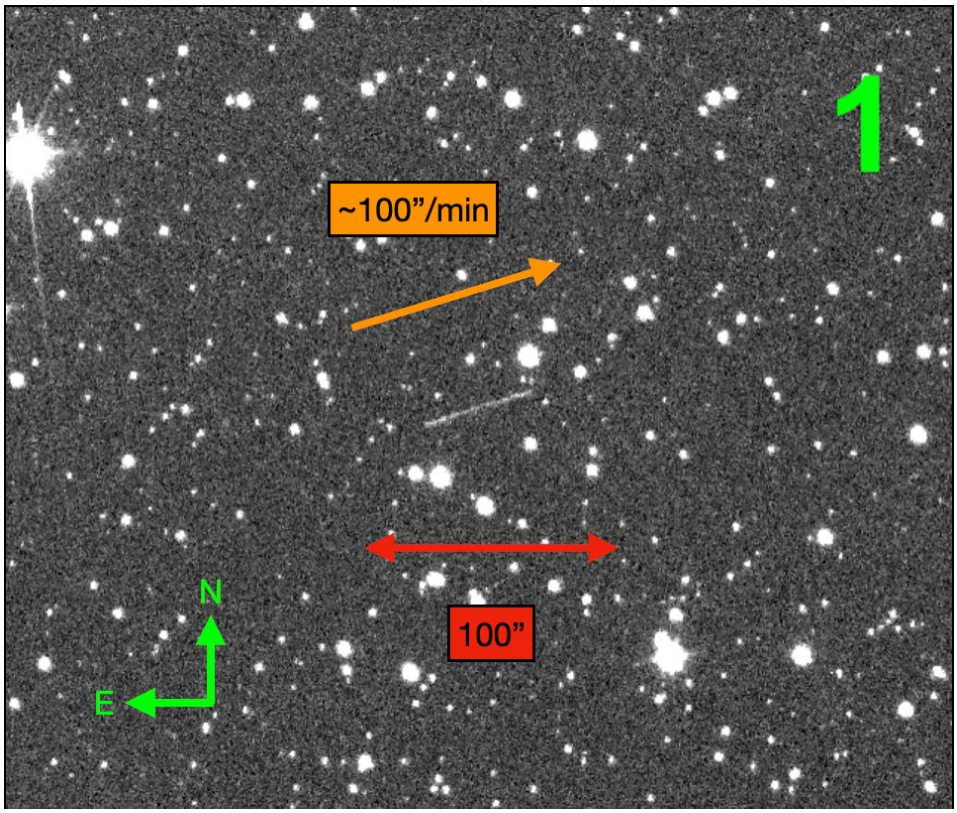
Newsletter frequency over summer (Erik Kool / Igor Andreoni):

During July and August the ZTF newsletter will be circulated every two weeks instead of weekly. We would also like to remind everyone to let us know about any new ZTF publications, so we can include them in the paper corner!

News from working groups

Solar System: “We have a new asteroid follow-up helper joining us from Nation Central University, Angela Hsu. Angela is a student at NCU working on her masters and will help us with monitoring fast-moving asteroids detected by ZTF. Today she submitted her first NEO candidate, ZTF0DcQ. We also

discovered 2020 NB, which was found in 6 x 30s r-band exposures spread out over ~1 hour. We show the asteroid in the gif slideshow below.



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AGNs and TDEs:”We are working on the latest TDEs (ZTF20abgwfek, ZTF18aakelin) and have also identified a few impostors (eg, ZTF20aaunsze, ZTF20abdxoeu).”

Machine Learning: “The paper on ZTF variability in 20 fields, a precursor to one on all sky that ZTF has observed, is now ready and being sent to the Pub Board (Van Roestel et al.). It incorporates 34M light curves, and we have run two machine learning classifiers on the set. Period finding algorithms were run on all these light curves, and one of the bottle-necks was a slow analysis of variance (AOV) algorithm. Recently Przemek has written a basic GPU version of it. A SURF student, Ethan Jaszewski, will be working with Matthew to streamline period finding better. Meanwhile Michael will be implementing the current version as we start moving towards the full sky variability. Paper II in the variability series is Coughlin et al. about the period search workflow. A large number of variables of different types are now available given this work. We will continue to use active learning to further improve the datasets using the infrastructure that Dima has built. Since DR3 is public, it will be good if ZTF can take advantage of these lists and publish more science papers using the classifications. By defining various cuts on the parameter sets it should be possible to use the marshals more effectively. Please get in touch if you are interested in

specific classes or want to implement specific cuts or want to find out more (aam@astro.caltech.edu). ML meetings are at 2 PM on Thursdays."

Multimessenger: "In the past week we were alerted twice on the detection of a short GRB. Unfortunately the first was already close to setting, and the second had too poor a localization to warrant follow-up. "

Physics of supernovae and relativistic explosions: "OKC presented three ZTF papers on highly unusual SN and one paper on a sample of Type Ic SNe from the PTF+iPTF surveys. Leonardo Tartaglia's paper is on a peculiar supernova which might be a stripped-envelope SN interacting with CSM. Jesper Sollerman presented a paper on two stripped-envelope SNe with signs of interaction. ZTF19abucwzt is of particular interest because it shows a plethora of emission lines and bright radio emission that are observed only in strongly interacting SNe. Erik Kool presented a paper on the Methuselah Type Ibn SN ZTF20aalrqbu. Last but not least, Cristina Barbarino presented her paper draft on the systematic study of Type Ic SNe from the PTF+iPTF surveys. Although a PTF paper, her results have direct implications on what we can do with SESNe in the ZTF era."

The papers corner:

Please keep us updated about your submitted/published papers, they will be advertised here.
Please send Joy Painter, the Astronomy Librarian at Caltech, links to papers as soon as they are published. They will be kept track of here.

Reminders:

- PublicAlerts:There is a link to the alerts archive on the website!
- Please help us keep track of all the available softwares! A preliminary list is available on the twiki. Let us know if you are building a software which you think could benefit (or be relevant to) a large portion of the collaboration.
- **ZTF general slack channel**: Please join through this link!
- If you want to get access to the **ZTF data** via the IRSA interface, please request data access to the communication coordinators: ztf.communication.coordinators@gmail.com
-**Archive GUI** now ready! The interactive image search, filtering and visualization tool is now ready ().
- The **ZTF Twitter account** is now active! https://twitter.com/ztfsurvey Re-tweet @ztfsurvey!
- To use the **url shortener**(e.g. during telecons, talks, in emails), navigate to http://zwicky.tf/shorten (username: ztf password:16chips) and type in the URL you want shortened.
- The **Wiki page** is active! Check it out at http://zwicky.tf/wiki. To request access, please email us at ZTF.communication.coordinators@gmail.com

“Everything that is really great and inspiring is created by the individual who can labor in freedom.” - Albert Einstein

Have a good and productive week!

Erik and Igor