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Newsletter #137 August 19th 2020

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If the newsletter does not look good in your email, check the pdf [here!](#) [Once again, you may be able to enjoy the new Solar System group digital content only from your email]

News from working groups

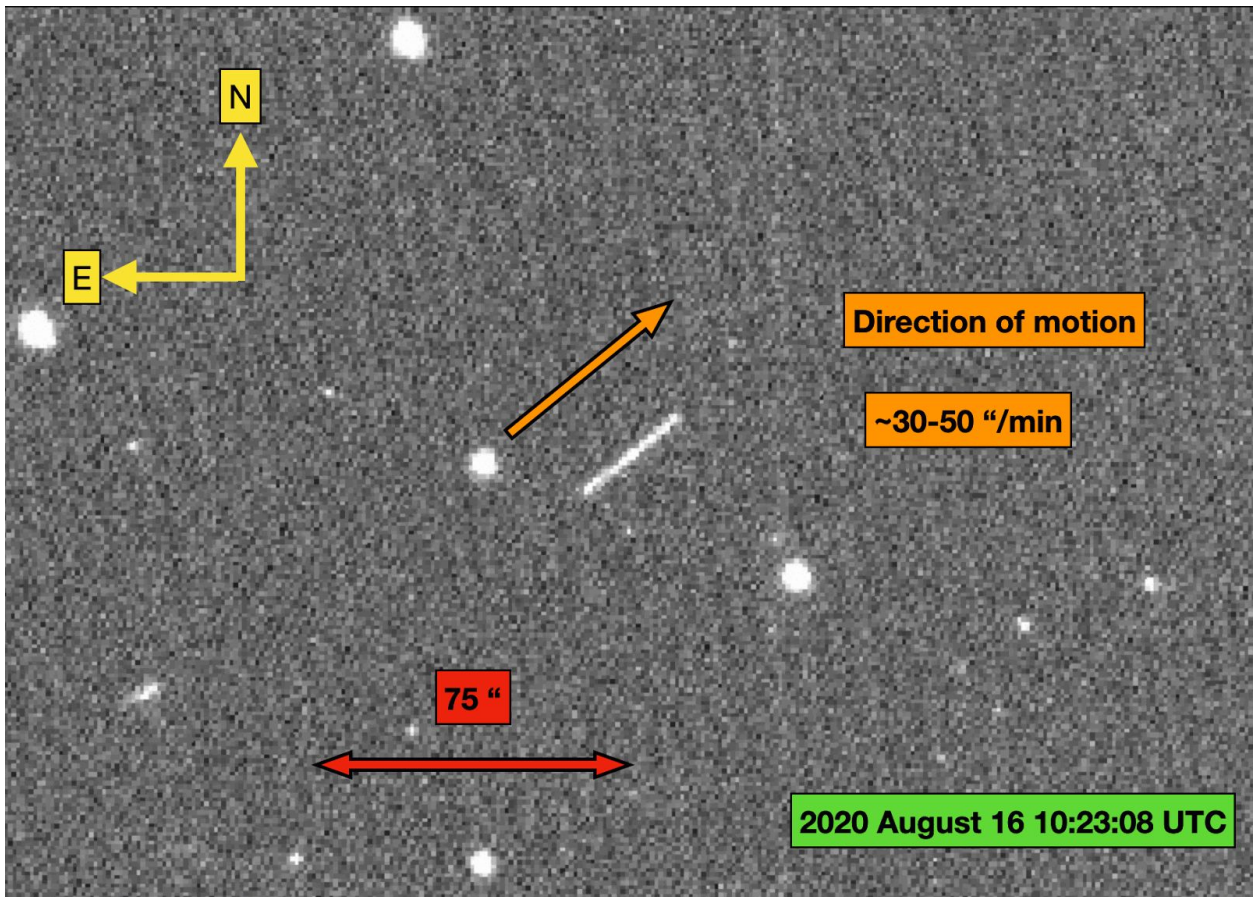
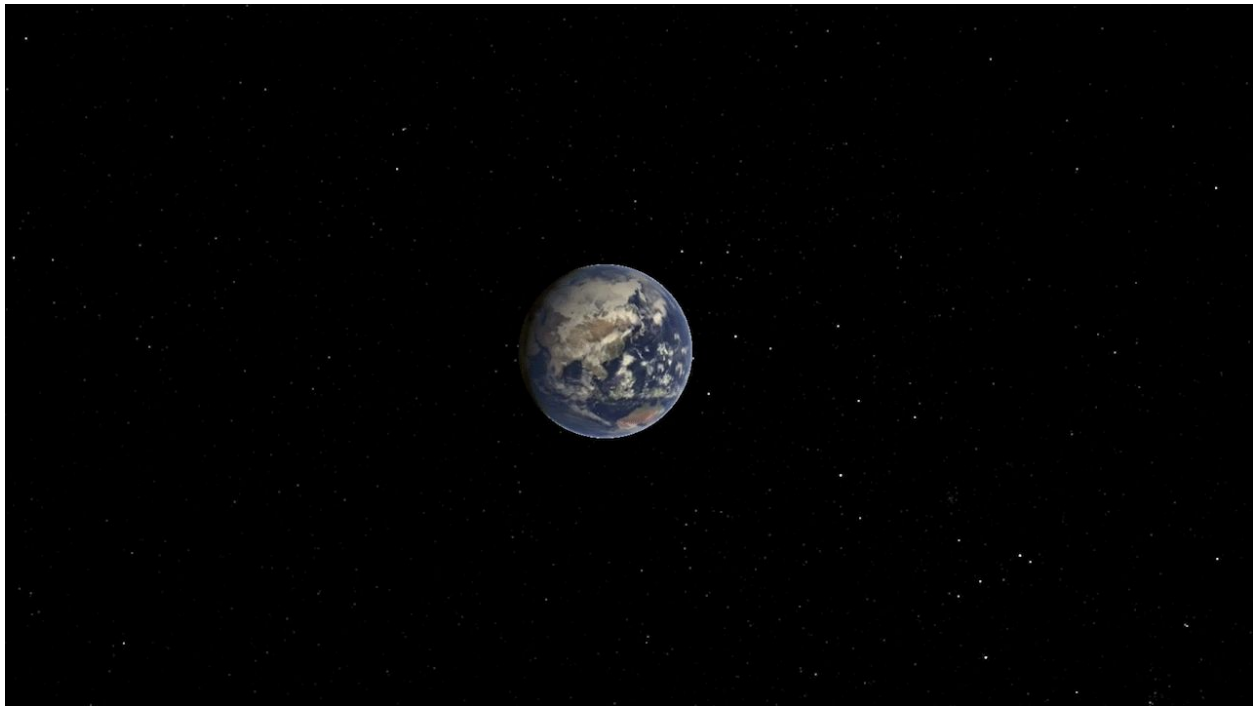
Solar System: “This week, our new scanner volunteers, Chen-Yen Hsu from National Central University and Kritti Sharma at Indian Institute of Technology Bombay with Kunal Deshmukh, also at IITB, have been very productive discovering five new Near Earth Objects, including [the asteroid with the closest approach distance to the Earth, 2020 QG](#). The asteroid was discovered as a trailed detection and after it only had passed less than 3,000 km above the Earth's surface with the Earth's gravity significantly altering its trajectory as seen in the attached image. The discovery is a great example of ZTF's ability to find objects that are passing close to the Earth with its capability of detecting ZStreak objects enabled by its data processing system, machine and deep learning algorithms. Thank you to our excellent ZStreak scanning volunteers for your hard work and dedication that helped this discovery!

[VIDEOS BELOW]

Also, we had a paper accepted in the Astrophysical Journal Letters, "[Characterization of Temporarily-Captured Minimoons 2020 CD3 by Keck Time-resolved Spectrophotometry](#)". The skilled observations of Christoffer Fremling of minimoons 2020 CD3 enabled the first spectrophotometric characterization of a minimoon and asteroid ~1 m in diameter. The observations show that the object has a basaltic composition similar to the surface of the large asteroid Vesta and some lunar rocks.”

Physics of supernovae and relativistic explosions: “At the last telecons, we had two paper presentations. The first paper is by Dan Perley. This paper is about general transient properties from the Bright Transient Survey, a first estimate of the SN rate and general host galaxy properties. This paper also presents two web-interfaces (one for the public and one for the private) to filter transients from the BTS sample. Nora presented a paper on pre-cursors of interaction-powered SNe (sample size 196). She found precursors to 18 SNe IIn and to the IIn SN2019uo. Most are longer and/or more energetic than the 2012a pre-outburst of SN2009ip, requiring a persistent source of energy. She found no correlation between SN properties and precursor properties. Both papers are expected to be submitted very soon.

Multi-messenger: “A short GRB was detected last week with *Fermi*, but unfortunately it was not observable with ZTF.”



Cosmology: “We have been working on a direct epoch-by-epoch comparison of different photometric pipelines, i.e. ZUDS, IPAC forced photometry, ForcedPhotZTF for the Type Ia supernovae in the cosmology year 1 sample. This could be of interest for other types of transients as well.”

The papers corner:

Bryce Bolin et al. from the Solar System working group had their paper accepted for publication in The Astrophysical Journal Letters: “[Characterization of Temporarily-Captured Minimoons 2020 CD3 by Keck Time-resolved Spectrophotometry](#)”

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

“Tell me and I forget. Teach me and I remember. Involve me and I learn ” - Benjamin Franklin

Have a good and productive week!

Erik and Igor