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

News from working groups

Galactic and M31 Science:

"We continue to search ZTF data and are obtaining follow-up observations on many different types of white dwarfs and weird binary stars. We are also continuously improving the usage of Fritz and its filters; Michael Kuhn has implemented a trend-fitting algorithm in the mongo query language.

Two new papers can now be found on ArXiv; one on a long period white dwarf - brown dwarf system and one on the period-luminosity relation of WUMa systems."

Solar System:

"Last week, ZTF discovered very close-approaching NEO 2021 JU6 on 2021 May 14 6:27 UTC. Below is a compilation of the two discovery images and two of the recovery images taken ~3 h later:
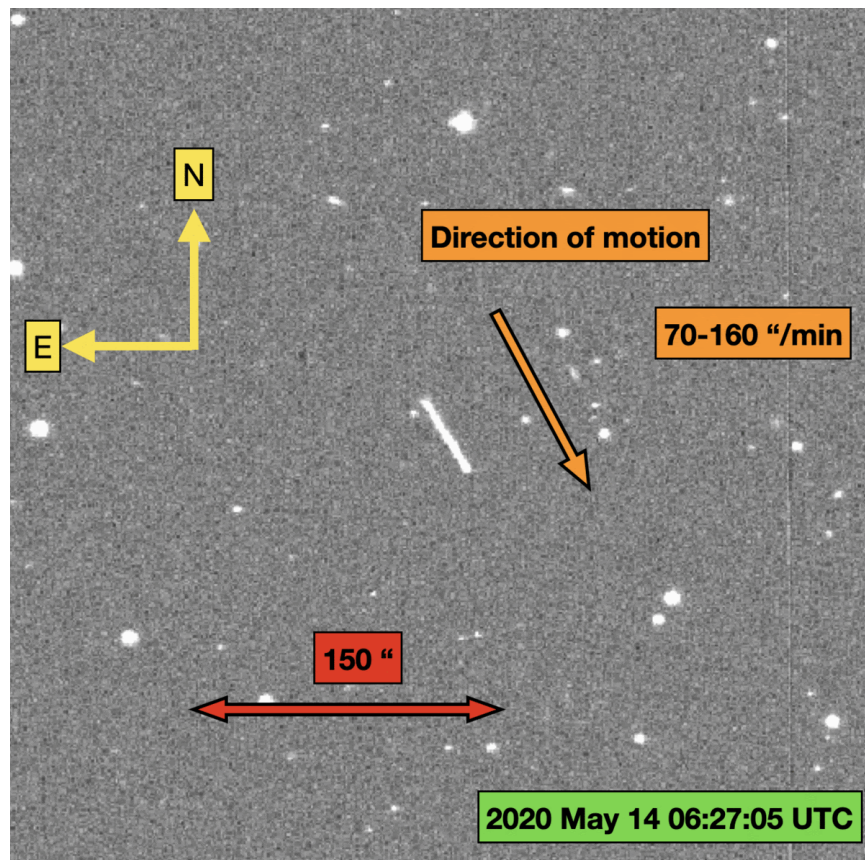
The object is ~10 m in size and in the Apollo-class of NEOs with an orbit that crosses the Earth. ZTF discovered the object ~8 h before the time of its closest approach when it passed only ~70,000 km above the surface of the earth, 1/5th of a Lunar distance on 2021 May 14 15:01 UTC. A short movie showing the passage of 2021 JU6 through the Earth-Moon system between 2021 May 14 02:00 and 2021 May 15 04:00:

"
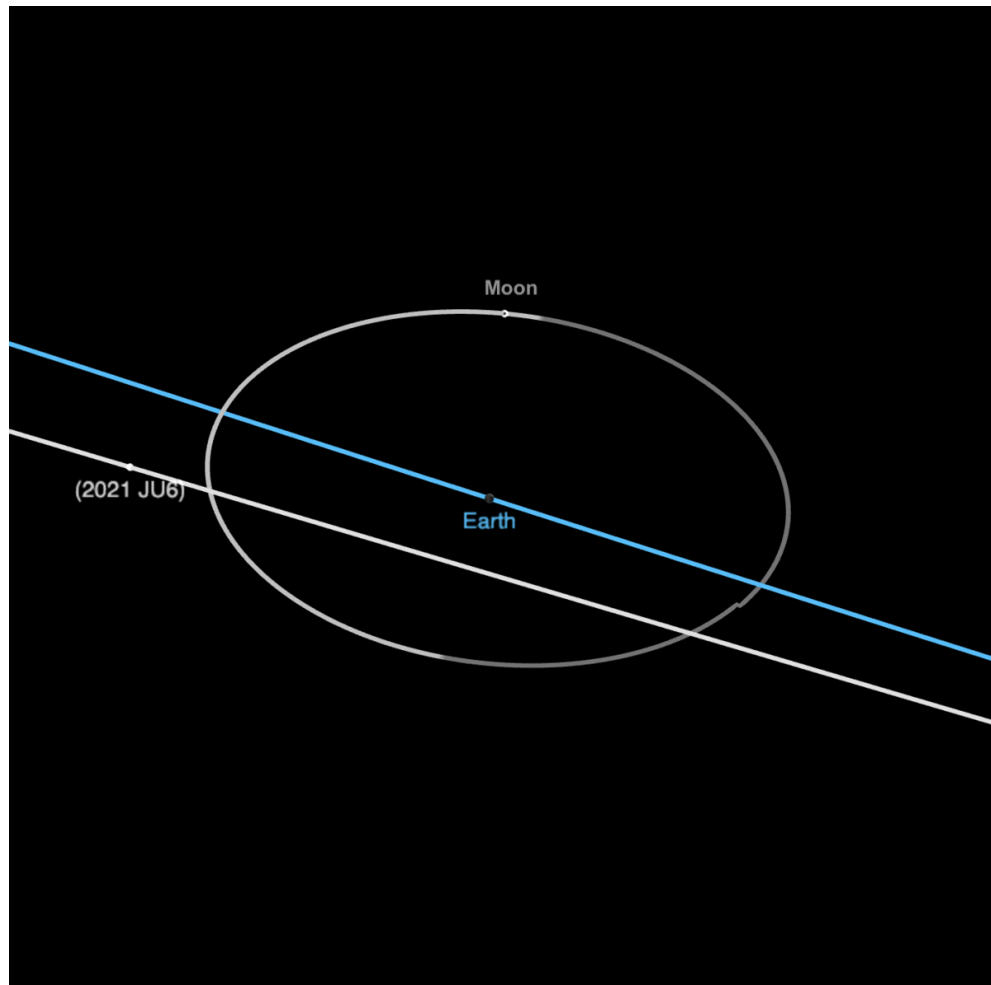
Cosmology with SNe Ia:

"The cosmology group spent most of last week in a detailed discussion on bumps: where they come from, how many there might be and what they might mean. The driver behind this is ZTF21aapehpx: a beautiful Ia @ z=0.04, caught early and with a clear early excess. Joel Johansson and Maxime Deckers took us through the properties of this object, and a curiosity that has emerged: this object also shows a prominent secondary max after peak.

It turns out that this isn't the only member of this class: the survey has discovered at least 5 more. As a result, the team are now working on a project to characterise whether all 'secondary max strong' SNeIa's

show early time bumps, and vice-versa. The conclusions on that, and what it might mean for SNeIa progenitors coming shortly….

To go with this, Mark Magee took us through some work he's been doing on the decidability of early time bumps in ZTF. From simulations, the survey should be able to see up to 50% of bumps in SNeIa z<0.04, but only, of course, if they have bumps! With 'bump detection efficiency' and 'bump emission mechanism' strongly correlated, the plan is to compare these efficiencies to the number of bumps seen in the data, and hence constrain the relative rate of SNIa progenitor scenarios: more on that soon.

This week, the work group is thinking about practicalities; what to discuss during the collaboration meeting. Join us tomorrow at 3 for some fun, or pick up the conclusions on the Twiki for those late to the party."

Multimessenger:

"Last week, we performed high-energy neutrino follow-up for IceCube-210510A. No compelling candidates were found, but we are still monitoring the area. The universe granted us another neutrino (IC210516A), but this one unfortunately was not observable with ZTF."

Physics of supernovae and relativistic explosions:

"Last week, the Bright Transient Survey and the Fast Transient groups discovered a [young SN](#) that turned out to be a 2-day old H-poor SLSN. It is the first SLSN that was identified within days after explosion! Spectroscopy and Swift UV observations were immediately requested and carried out. The SLSN group is preparing an HST DDT to get a series of UV spectra. For comparison, this would only be the third H-poor SLSNe with UV spectroscopy. Check out the [Astronote 2021-155](#) for more details."

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 communication coordinator Ivona Kostadinova: ivonata@astro.caltech.edu

- 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 Ivona Kostadinova at ivonata@astro.caltech.edu

"Don't worry about people stealing your ideas. If your ideas are any good, you'll have to ram them down people's throats."
- Howard Aiken

Have a good and productive week!

Erik and Igor