

## **A Memorandum of Understanding (MoU) between:**

The ZTF consortium, as represented by the “Physics of SNe” working group of the Zwicky Transient Facility (ZTF-SN); Avishay Gal-Yam (WIS) will serve as a point of contact (POC) for the purpose of this MOU.

And

Senior Researcher Dr. Alceste Bonanos at the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing at the National Observatory of Athens and students or postdocs working on this project as part of her group (NOA team).

*Objective: The ZTF-SN working group and the NOA team will form a collaboration aimed at collecting photometric observations of ZTF targets with the purpose of investigating the short timescale behavior and excess emission of supernova light curves at early-times.*

*Contributions:*

*ZTF-SN: The ZTF-SN working group will provide, on a non-exclusive basis, transients discovered by the Palomar 48 inch Oschin Schmidt telescope within the ZTF partnership proprietary data to the NOA team. These will be classified supernovae (SNe) of all types that are several days (>5 days) before their maximum light with a magnitude of at least 17 mag and that are deemed as promising targets for high cadence photometric follow up, not heavily contaminated by the host galaxy. This includes all information necessary for such observations (coordinates, magnitudes, finder charts, contextual information, and/or ongoing attempts for classification with other facilities). The rate of suitable candidates is estimated to be ~1 per month.*

*NOA: The NOA team will propose for, obtain and reduce Aristarchos and/or Kryoneri photometric observations of as many of those among the candidates that the parties agree are best match to the observational capabilities and interest at the time. Target choice will be announced to the entire ZTF-SN WG by the POC via telecon and other digital means (Wiki, Marshal etc). The NOA team will make available reduced photometric sequences to the ZTF-SN working group (and, if appropriate, to other ZTF working groups) in a timely manner.*

*Furthermore, we will submit an observing proposal for time on the 2.3 m Aristarchos telescope in collaboration with the ZTF-SN working group to obtain late-time photometric observations of ZTF SNe. Aristarchos (with LN CCD) can reach V=20 mag in 1200 sec with a 0.02 mag precision (LN CCD), while the 1.2 m Kryoneri telescope can reach R magnitudes of 11.19, 15.21 and 17.18 in 0.023, 1, and 10 s, respectively, at S/N=10 (see Xilouris et al. 2018, A&A, 619, 141).*

*Data Rights and Benefits:*

*The NOA team will have a right to lead publications on objects where the high cadence photometry scientifically merits standalone papers. Such papers can be either single-object comprehensive papers that include additional observations, or high cadence photometric-specific papers that will be published in parallel with other papers on the same target published by other ZTF members. The initiation of such papers will be announced to the ZTF partnership using the standard channels monitoring new papers (ZTF-SN WG, publication board). In cases where the early photometric data does not merit standalone papers, the NOA team will contribute its data to ZTF papers led by other groups.*

*The NOA team may obtain unlimited follow-up of such sources with their own resources*

*after approval by the ZTF-SN coordinator. The ZTF-SN working group will further contribute P48 survey photometry, P60 SEDM spectra, and any additional follow-up it decides to share to further maximize the impact of such efforts. ZTF co-authorship on these publications will be determined by the ZTF publication policy.*

*For all other publications resulting from this collaboration, the ZTF-SN working group will have first right of refusal. Publications including data obtained by the NOA team will invite 2 team members as co-authors. Additional co-authors will be added only in special cases that are specifically justified and approved by the ZTF-SN WG.*

*Duration:*

*This agreement covers the period from 1 May through 30 April 2020. It can be renewed annually by mutual agreement by both parties.*