

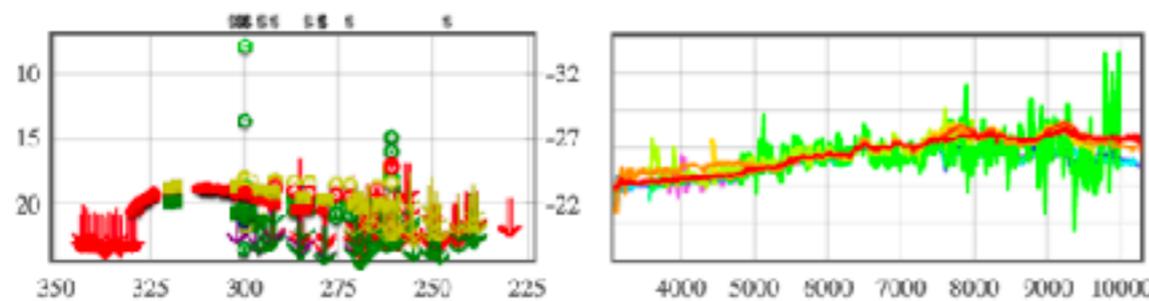
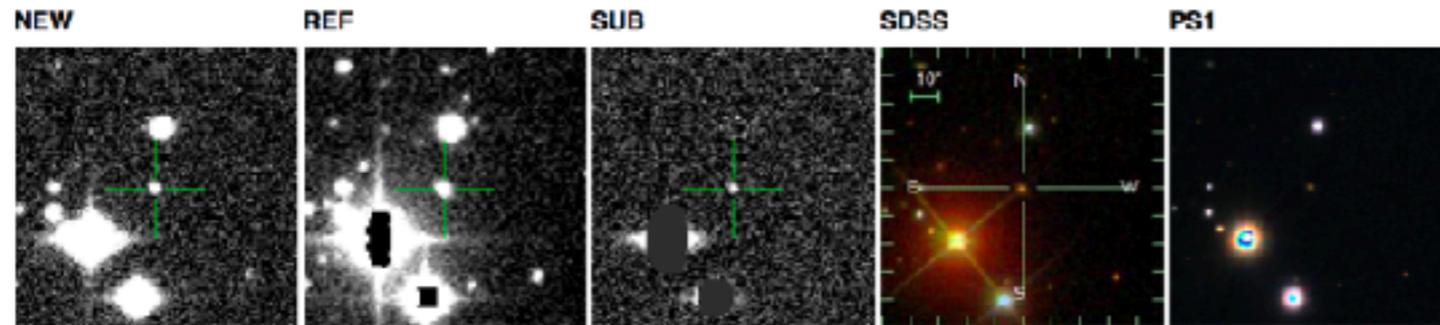


# 16geu SN Ia

+315.4d 21:04:15.86 -06:20:24.5  
316.066037 -8.340139

View another

OVERVIEW PHOTOMETRY SPECTROSCOPY OBSERVABILITY FINDING CHART NERSC EXAMINE IPAC EXAMINE



$r > 19.7$  (229.3 d) | Upload New Photometry

$z = 0.408$  | Upload New Spectroscopy  
DM (approximate) = 41.78

### ADDITIONAL INFO

NED TNS SNEx SIMBAD VizieR HEASARC DECam SkyView PyMP MPChecker Extinction  
CFHT IPAC DSS WISE Subaru VLT FIRST CRTS Variable Marshal (Search) ADS

### CROSS REFERENCES

**ATel 9603:** Detection of a highly magnified Type Ia Supernova by the intermediate Palomar Transient Factory  
*Ariel Goobar et al., 2016 Oct 07*

### COMMENTS

- 2017 Feb 17 ccannell [SDSS\_photz\_auto]: 0.227 ± 0.0451 (0.543", [reference])
- 2016 Dec 24 penugent [classification]: SN Ia
- 2016 Oct 20 joeljo [comment]: Maybe [SII] $\lambda$ 6716, 6731 at  $z=0.2163$
- 2016 Oct 13 jesper [info]: There is also a spectrum from NTT/PESSTO from Oct 8 [view attachment]
- 2016 Oct 13 penugent [classification]: SN Ia
- 2016 Oct 13 penugent [phase]: +12 days
- 2016 Oct 12 rahman [info]: Updated light curve fit with now P60 data at max. Vanilla Ia @  $z=0.41$  with  $E(B-V)=0.2-0.3$  depending on extinction law. [view attachment]
- 2016 Oct 12 joeljo [info]: There is P60 imaging from Sep. 12 and i,z images from SkyMapper on Sep 20.
- 2016 Oct 06 tkupfer [comment]: reduced with the standard DBSP pipeline
- 2016 Oct 06 tkupfer [comment]: re-reduced DBSP spectrum from Oct. 04
- 2016 Oct 06 avishay [comment]: Also, weak H $\alpha$  + NII complex in emission at  $z=0.2163$
- 2016 Oct 06 avishay [comment]: And another set of Na D and Ca II H+K at  $z=0.2163$  or so. Nice!
- 2016 Oct 06 avishay [comment]: Na D and Ca II secure at  $z=0.409$
- 2016 Oct 06 jesper [info]: New spectrum does show Na and Ca in absorption at 0.4087 but also at 0.2164, the latter (lens) also seem to show emission lines at this redshift, H $\alpha$  NII and OII

# Extragalactic Marshals for ZTF

Brad Cenko + Mansi Kasliwal

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# (i)PTF Marshal

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- ❖ The (Extragalactic) Marshal was critical to the success of the (i)PTF project
  - ❖ Candidate screening
  - ❖ Contextual annotation (e.g., host galaxy redshift)
  - ❖ Visualize light curves and spectra
  - ❖ Plan / execute follow-up
  - ❖ Collaboration / coordination

# Extragalactic Marshal in the ZTF Era

- ❖ Initial partnership effort led by Yi Cao largely foundered after he left for Google
- ❖ “Public” effort led by Josh Bloom ongoing, but supposedly unlikely to be ready for start of science operations (certainly first light)
- ❖ GROWTH Marshal (Kasliwal) focused on follow-up
- ❖ How to proceed for partnership?

☆ Shri Kulkarni To: wingip@astro.ncu.edu.tw, Avishay Gal... 6/13/17, 3:16 PM

Dear Wing, Avishay, Ariel, Marek, Stuart, Patrick, Andy and Tom:

A number of tools are needed to make ZTF successful. As in the past (PTF, IPTF) the tools were developed by interested parties and not by the project. ZTF is a much larger entity than PTF and even IPTF. However, the largeness of ZTF does not obviate the need for tools. On the contrary we need a vigorous development of tools for ZTF.

Here, I specifically raise the issue of a critical tool: the Marshal. The Galactic folks under the leadership of Prince are refurbishing the existing Galactic Marshal and hope to be ready for commissioning. There is good communication within the asteroid group and so will assume that the group will be ready for commissioning also.

In the past the extra-galactic folks used a single "Marshal" for all of extra-galactic science. The size and the sheer volume of ZTF data (which naturally has led many of us to rather specialized projects) does not readily lend itself to a single Marshal. Separately, some groups or PIs may want to focus and have a simple Marshal tuned to their need.

Brad Cenko has agreed to start a discussion group for all tools but starting with the Extragalactic Marshal. Those interested in this effort should contact Brad. I have requested that Brad produce a summary of possible options for the extragalactic Marshal by mid July. I note that Lin Yan has set aside time to discuss the status of Marshal(s) for the upcoming late July meeting.

I note here that there are groups outside ZTF who have already developed their own Marshals (e.g. LCO, DES, PS-1, SkyMapper etc). Bloom is interested in developing a portable Marshal (which can operate in the Cloud and is extensible). He has expressed interest in making this tool available to the entire TDA community. I suspect that it will be ready by some time next year.

In fact, as time goes on, it is likely that we will see the emergence of tools developed by groups and some of them will be made available to the entire community. [That is how those groups will achieve leadership in our field].

Sincerely  
SRK

cc Eran, Jesper, Uli, Cenko, Suvi, Kaplan, Ivazic, Bellm, Manis, Yan, Helou

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# Bounding the Problem

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- ❖ Decision 1: Separate issue of real / bogus scanning (occurs further upstream)
- ❖ Decision 2: Project-based paradigm (both scientific and political motivations)

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# Functional Specification: Workflow

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- ❖ Users define “projects” (e.g., filters on incoming transient stream). Built on top of UW “mini-brokers”. Example: nuclear transients from non-AGN for tidal disruption events
- ❖ Log into view Project Home Page, where sources can be added to project (either from automated filter, or could be sent by other projects)
- ❖ Individual source pages similar to (i)PTF
- ❖ Possible additions: user-contributed analysis (e.g., SN Ia light curve templates) and “samples”

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# Additional Desired Functionality

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- ❖ TNS / Wiserep integration (“push” model)
- ❖ Modern identity management system
- ❖ Historical light curves from (i)PTF
- ❖ Slack integration
- ❖ **Documentation**
- ❖ Full document: [https://docs.google.com/document/d/1-Pe\\_VcKLT1zDC11G7ZByIhxT-Kl2pvR5HkG0XPPsxBE/edit?usp=sharing](https://docs.google.com/document/d/1-Pe_VcKLT1zDC11G7ZByIhxT-Kl2pvR5HkG0XPPsxBE/edit?usp=sharing)

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# GROWTH Marshal

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- ❖ Project-centered approach largely identical to paradigm for GROWTH marshal
- ❖ Ongoing effort (Kasliwal, Feindt, Hung, Cannell), i.e., not necessary to start from scratch
- ❖ But not possible nor reasonable to expect implementation of all desired ZTF functionality

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# Recommendations

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- ❖ 1. Until the arrival of another system (e.g., Bloom), we utilize the GROWTH Marshal for the ZTF era. If/when other possibilities are available, we can reconvene to consider them.

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# Recommendations

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- ❖ 2: GSFC will provide funding for a professional programmer to support the GROWTH Marshal development over the coming months. Specifically the developer will be charged with two tasks:
  - ❖ 1. Defining the API for the filtering step, so that projects can define their own criteria to select transients of interest to them.
  - ❖ 2. Extensively documenting the database schema and the marshal code, so that collaboration members can implement new capabilities (on a local test version) and then feed these back into the GROWTH Marshal.

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# Recommendations

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- ❖ 3. The opportunity to assist with the development of the GROWTH Marshal should be open to the entire ZTF collaboration, with team activities well publicized (e.g., via the GROWTH Wiki). Those interested in contributing specific capabilities, please contact Mansi.

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# Recommendations

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- ❖ 4. A initial version of the GROWTH Marshal, with the capability to define projects (and add users to them), and a recreation of the (i)PTF source pages, should be available to the ZTF collaboration by [1 October](#). By making the system \*extensible\*, additional functionality can be added as time passes.