Current BL Observing plan for TESS targets

Automated Planet Finder
Lick Observatory, Mt. Hamilton, California, USA
contact: Howard Isaacson (hisaacson@berkeley.edu)

With a 2.4-meter primary mirror and a high resolution optical spectrograph capable of a resolution of 100,000, we will observe TESS identified planet-host stars (*hereafter:* TESS targets).
Such spectra can be searched for narrow, artificial, emission in the form of laser lines. TESS targets will make up primary observing list over the next few years.

Allen Telescope Array
Hat Creek Radio Observatory, California, USA
Alexander Pollak (apollak@seti.org)

With its 42 6.1-meter antennas equipped with a extremely wide-band feed, the ATA allows us to observe TESS test targets over a frequency range of 1.0 to 11 GHz. The full control of the telescope enables flexible scheduling and target selection. We plan to beamform on TESS targets of interest to provide maximum sensitivity for high time-cadence observations.

Five Hundred Meter Aperture Spherical Telescope
Guizhou Province, China
contact: Di Li (dili@nao.cas.cn) and Vishal Gajjar (vishalg@berkeley.edu)

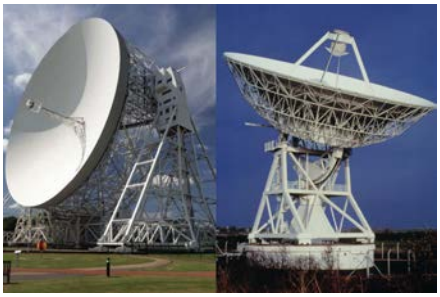
One of the largest single dish ($\sim$ 500-m) radio telescopes in the world.
Receivers with frequency coverage from 70 MHz to 3 GHz.
Plan to observe 16 TESS targets with around 30 minutes per star (10 hours total including overhead).
EIRP sensitivity $\sim 10^{11}$ W towards the TESS targets (with medium distance of 200 light-years).

Green Bank Telescope
West Virginia, USA
contact: Steve Croft (scroft@astro.berkeley.edu)

One of the most sensitive telescopes in the world.
100-meter diameter fully steerable antenna.
Capability to conduct observation up to 100 GHz.
BL instrument: 64 GPU nodes | 6.2 PB storage
Program to followup TESS targets with 200 hours of dedicated observations.

Keck Observatory
Maunakea, Hawaii, USA
contact: Howard Isaacson (hisaacson@berkeley.edu)
photo credit: KeckObservatory.org

The 10-meter Keck I Telescope houses HIRES, a high resolution spectrometer which collects optical spectra capable of detecting narrow emission features from artificial sources. Archived spectra taken in support of the TESS mission will be searched for laser lines.



Jodrell Bank Observatory and e-MERLIN array
Jodrell Bank, United Kingdom
contact: Michael Garrett (michael.garrett@manchester.ac.uk) and Vishal Gajjar (vishalg@berkeley.edu)

70-m Lovell Telescope along with six 25-meter e-MERLIN antenna spread across the UK.
Frequency coverage from 150 MHz to 24 GHz.
BL Instrument: 1 head node, 1 GPU node, and 1 storage node.
Program to followup 10 TESS targets with roughly 10 hours of observing time with e-MERLIN.

International Low Frequency Array
Birr Castle, Ireland and Onsala, Sweden
contact: Peter Gallagher (peter.gallagher@dias.ie), Tobia Carozzi (tobia@chalmers.se), and Vishal Gajjar (vishalg@berkeley.edu)

Receivers: LBA (10 - 90 MHz), HBA (110 - 250 MHz)
96 MHz of instantaneous baseband recording.
BL Instrument: 1 head node, 1 GPU node
Planning to observe 12 TESS targets over three sessions with 3 hours per session (3 weekends).

MeerKAT
Northern Cape Province, South Africa
contact: David MacMahon (davidm@berkeley.edu) and Daniel Czech (daniel.czech@protonmail.com)

64-antenna array.
13.5-m effective diameter offset-Gregorian design.
Dual-pol 856 MHz instantaneous bandwidth (L-band).
Planned deployment: 128 GPU nodes, 8 storage nodes.
Commensal beamforming towards TESS targets.

Murchison Widefield Array
Murchison Radio-astronomy observatory, Western Australia
contact: Steve Croft (scroft@astro.berkeley.edu)

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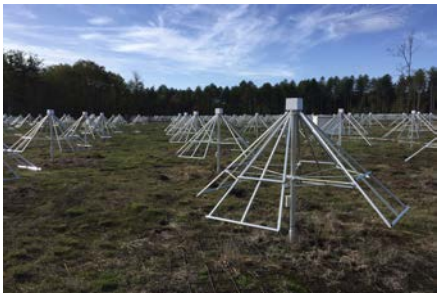
4096-dipole array (SKA-LOW precursor)
80 – 300 MHz
Extremely radio-quiet site
Large field-of-view allows commensal searches towards TESS targets in the southern sky.



NenuFAR Low Frequency Telescope
Nançay Observatory, France
contact: Greg Hellbourg (greg.hellbourg@gmail.com) and Philippe Zarka (philippe.zarka@obspm.fr)

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10 – 85 MHz
Voltage data capture enabled.
Multicast system allows commensal data capture
SETI program to observe stars with exoplanets (including TESS targets) is accepted as one of the Key Programs for NenuFAR commissioning process.

Parkes Observatory
New South Wales, Australia
contact: Danny C Price (dancpr@berkeley.edu)

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64-meter antenna with newly-installed Ultra-wide-band receiver covering 0.7 – 4 GHz.
BL instrument: 27 GPU Nodes | 3.1 PB Storage
Program to followup TESS targets in the southern sky with 200 hours dedicated observations.

Sardinia Radio Telescope
Sardinia, Italy
contact: Andrea Melis (andrea.melis@inaf.it) and Vishal Gajjar (vishalg@berkeley.edu)

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64-m single dish antenna.
Frequency coverage 300 MHz – 26 GHz with new planned receivers to go up to 115 GHz.
BL instrument: 1 head node and 2 GPU nodes.
Around 12 TESS targets will be observed across 18 – 26 GHz.

VERITAS Cherenkov telescope array

Fred Lawrence Whipple Observatory, Arizona, USA

contact: David Williams (daw@ucsc.edu) and Jamie Holder (jholder@physics.udel.edu)

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Array of four 12-m imaging atmospheric Cherenkov telescopes with $\sim$100 m separation designed for observations of $>$85 GeV γ-rays

Fast cameras with ns resolution and 0.15° pixelation

Sensitivity in the 300–600 nm wave band to flashes with $\sim$1 photon/m^2

Dedicated OSETI observations of TESS targets will be conducted by March 2020.