

Архив НКЦ SETI полностью отсканирован и доступен в сети

<http://Infm1.sai.msu.ru/SETI/koi/>

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## Архив

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- [Анкета SETI \(Объем 120 Кб\)](#)
- [Прошедшие конференции](#)
- [Прошедшие "Новости"](#)
- [Архив НКЦ SETI \(zip 650MB\)](#)

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ДЕЛО № 1

Подготовительные материалы по организации НКЦ SETI (Ассоциация SETI)

Начато 03 ноября 1997 г.  
 Окончено 29 апреля 1992 г.  
 На 60 листах

Ф. № <u>2</u>	Срок хранения; _____
Оп. № <u>1</u>	Исполнитель _____
Д. № <u>1</u>	Делопроизводитель _____

Проект

ЦЕНТР SETI ("Человек и Вселенная")

1. Проект разработан по рекомендации Всесоюзного симпозиума "Мировоззренческие и общенаучные основания проблемы поиска внеземного разума", Малетай, 28 - 31 октября 1987 г.

2. Центр SETI ("Человек и Вселенная") является вневедомственной (?) (или: межведомственной) общественной научно-просветительской и исследовательской организацией.

3. Задача Центра: пропаганда научных знаний и исследования по проблеме жизни и разума во Вселенной.

4. В состав Центра SETI входит:

- Астрономический сектор с обсерваторией (по типу народных обсерваторий) и планетарием;
- Лаборатория математического моделирования;
- Теоретический сектор;
- Библиотека;
- Музей;
- Лекторий.

5. Учредителями Центра SETI являются:

Академия наук СССР, Министерство культуры СССР, Общество "Знание" СССР, Всесоюзный совет научно-технических обществ (ВСНТО), Философское общество СССР, ЦК ВЛКСМ, Академия наук Лит. ССР, Министерство культуры Лит. ССР, Общество "Знание" Лит. ССР; при поддержке: Академии наук Арм. ССР, Академии наук УССР, Минвуза СССР, Минвуза РСФСР,

6. Центр SETI создается при (на базе) Астрономической обсерватории Института физики АН Лит. ССР, пос. Малетай

6.1. Центр SETI может иметь филиалы в других городах и населенных пунктах СССР.

7. Центр SETI является юридическим лицом, имеет расчетный счет в банке и действует на основании "Положения о центре SETI ("Человек и Вселенная")", утверждаемого Учредителями центра.

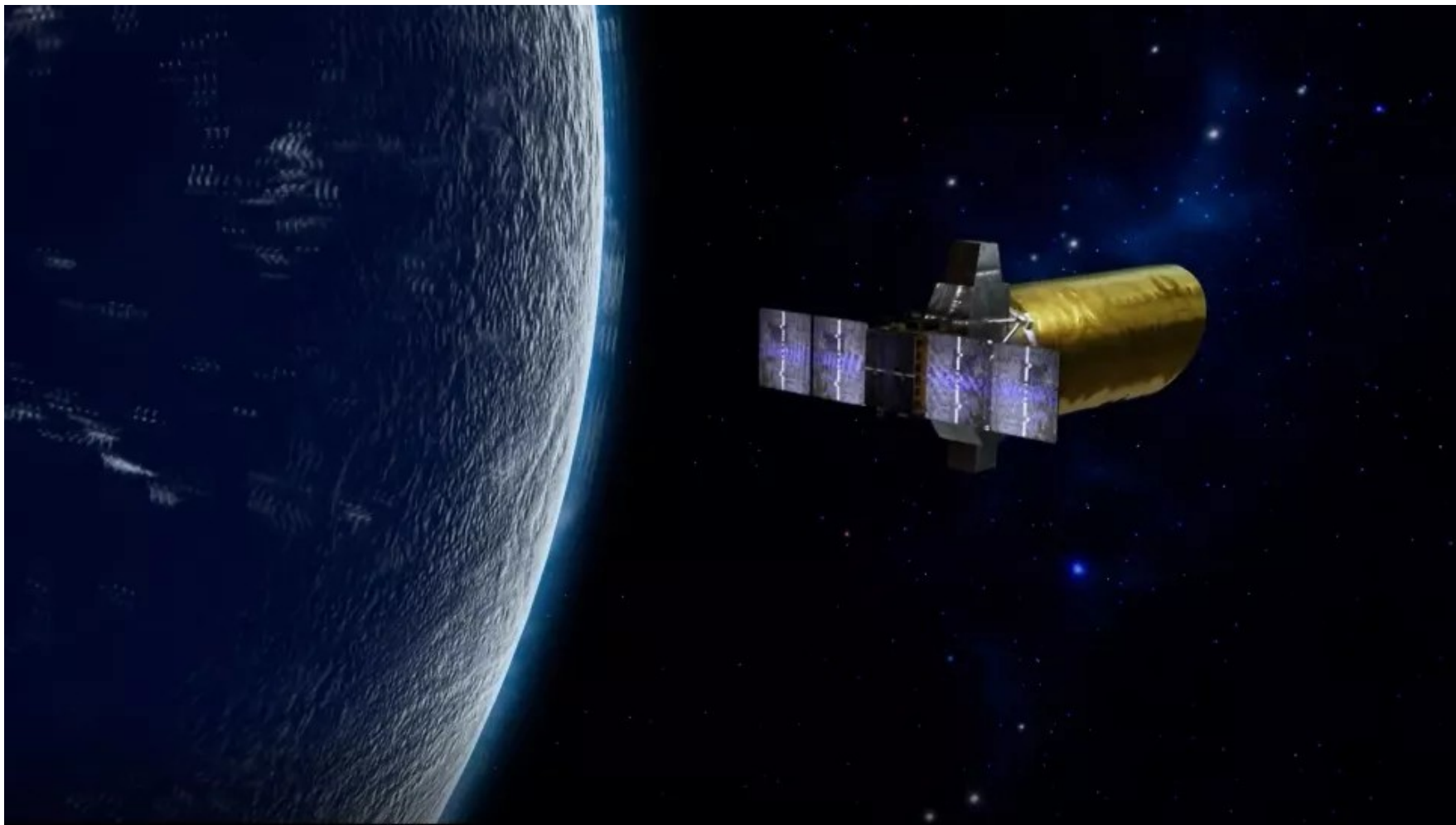
8. Финансовые средства Центра SETI образуются за счет ассигнований, выделяемых Учредителями по согласованному протоколу.

Целесообразно рассмотреть вопрос о создании общественного "Фонда SETI".



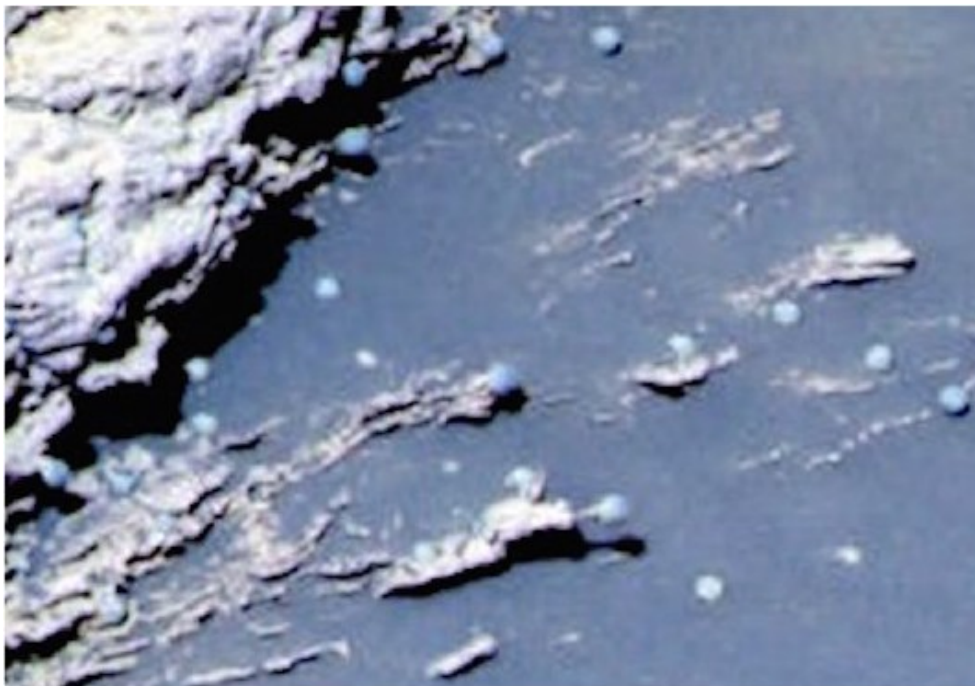
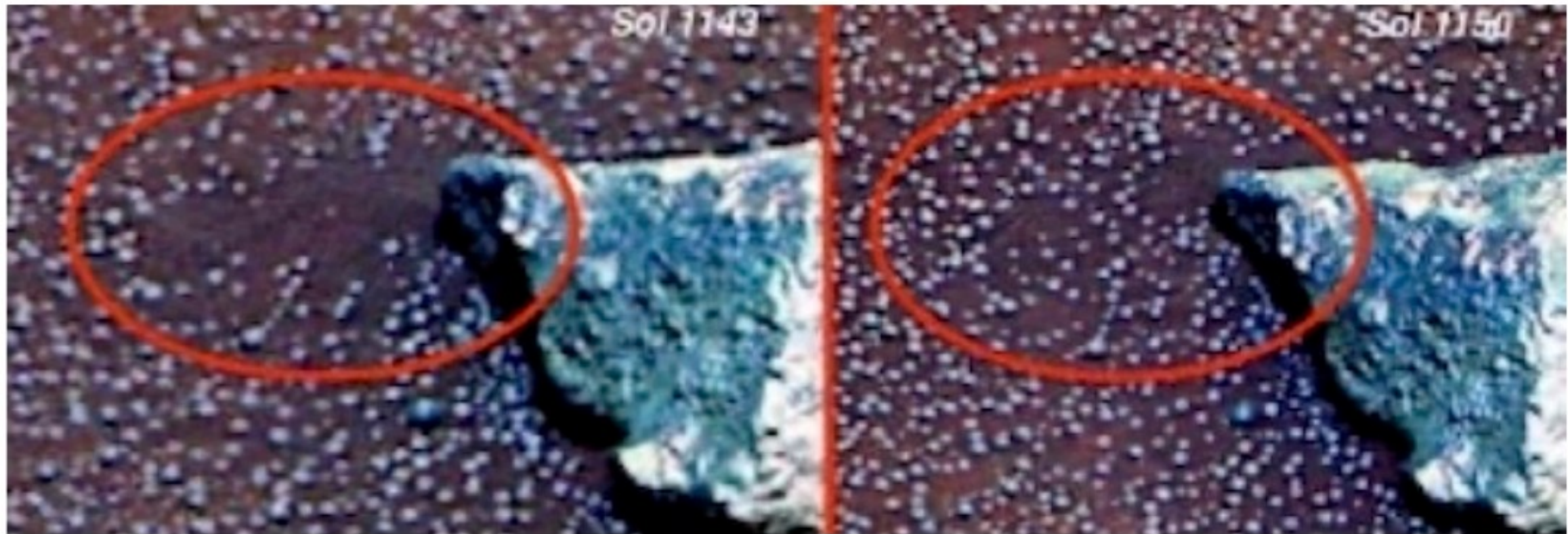
# Closeby Habitable Exoplanet Survey (CHES) Китай

<https://www.space.com/china-habitable-exoplanet-mission>



Поиск экзопланет земного типа в зоне обитания не дальше 10 пк около звезд F, G, K по возмущениям координат: астрометрия с точностью микросекунд дуги.

## Еще о жизни на Марсе (Curiosity)



**Figure 4.** Hematite concretions the size of "pebbles" "marbles" and "golf balls" (the largest five cm) from Utah's national parks. Reproduced with permission, courtesy of Fantasia Mining and Ashley Rouech.



**Life on Mars Discovered by NASA's 1976 Viking Landers:  
Lichens, Algae, Moss, Microbial Mats, Vesicular Trace Fossils in  
Utopia Planitia and Chryse Planitia**

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<sup>1,2</sup>Astrobiology Research Center, California, USA

<sup>1</sup>Center for Astrophysics, Harvard-Smithsonian, Cambridge, MA, USA

**ABSTRACT**

Vesicular rocks and thick clumps of green-colored matter photographed in Utopia Planitia and Chryse Planitia by NASA's Viking landers were subject to morphological and computerized quantitative pattern analysis. These vesicular rocks are not homogenous and include those similar to vesicular basalts, marine trace fossils, and "tafoni" which on Earth are fashioned via the interactional influences of moisture, powerful winds, the leaching of salts and lichen-chemical weathering. Upon magnification the green-colored vesicular substances closely resemble "vegetative matter" similar to green algae, lichens, mosses and vesicular mats. The green colors (based on false colors derived from spectra) may be indicative of chlorophyll and the capacity to produce oxygen via photosynthesis. These observations, when coupled with the continual replenishment of atmospheric oxygen and evidence of surface frost, subsurface water-ice, and past cycles of flooding and ponding of water, are supported by the positive results from the Viking Labeled Release and Gas Exchange experiments and should be viewed as confirming that beginning in 1976 the USA and NASA's Viking Landers 1 and 2 detected, photographed and discovered life and evidence of past life on Mars.



Figure 4: Chryse Planitia, Mars. Photographed by Viking 1.

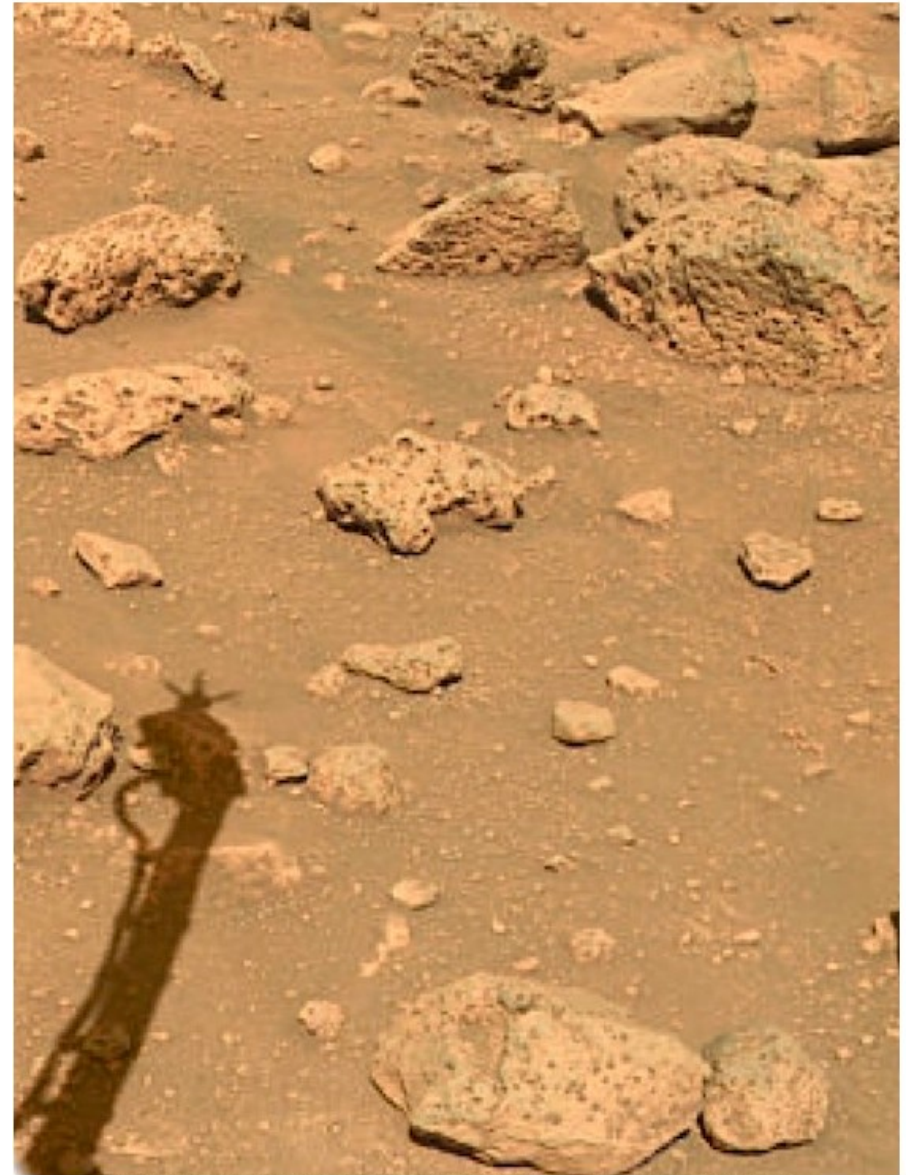


Figure 35: Utopia Planitia, Viking 2. Vesicular green colored matter and vesicular sediments.



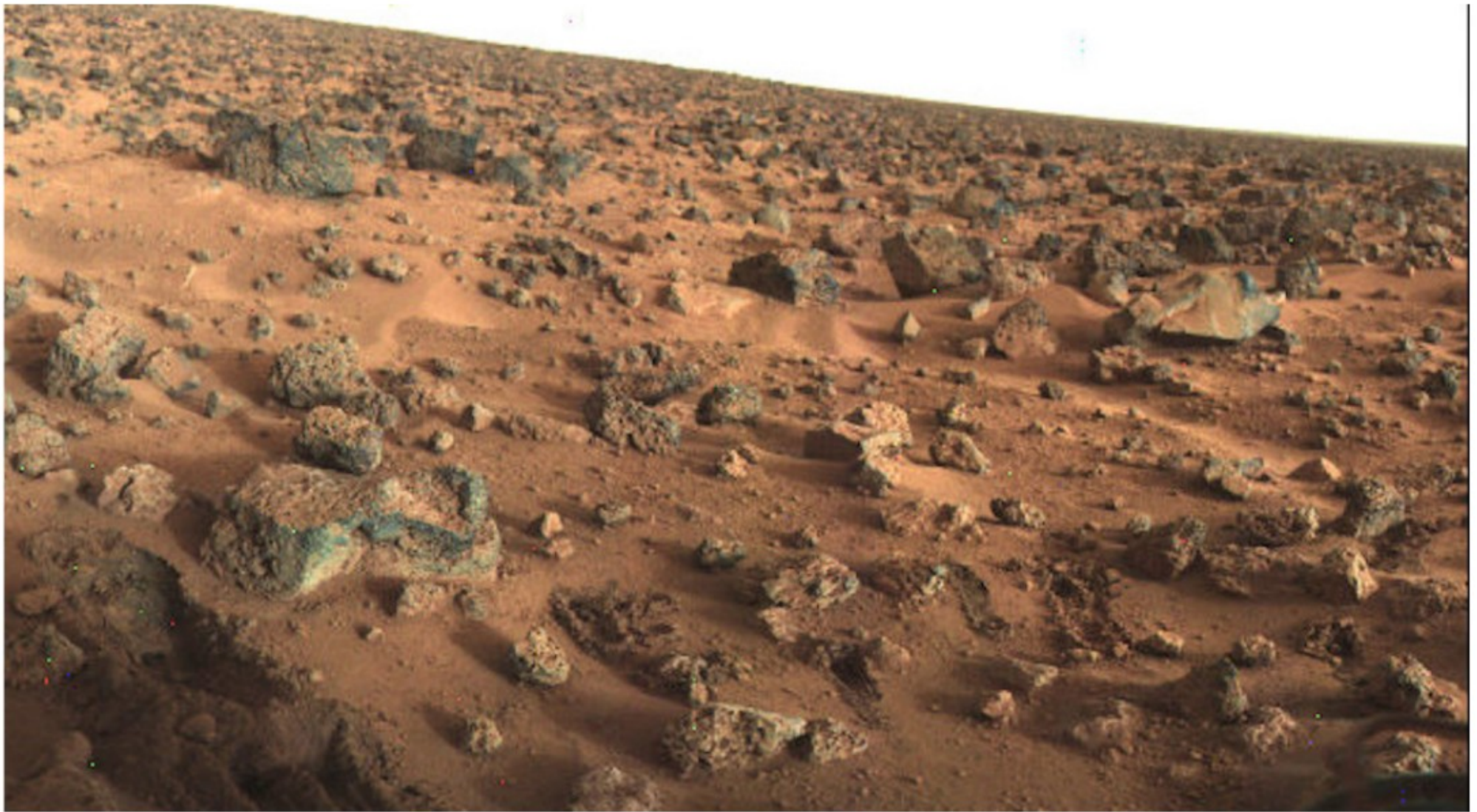


Figure 21: Utopia Planitia Viking 2. Approximate colors based on derived spectra.


















**Figures 43.** (Left) Mars, Sol 740, vesicular basalt photographed in Gusev Crater. (Right) Earth, Vesicular basalt, photographed by A. B. Joyce.



**Figures 49.** Earth, Pacific Ocean, Santa Cruz, CA. Mollusk trace fossils with bivalves within vesicles. Photos, R. Joseph.

# Sensitive Multi-beam Targeted SETI Observations towards 33 Exoplanet Systems with FAST

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RAN DUAN <sup>5</sup> LEI QIAN <sup>5</sup> CHENG-JIN JIN,<sup>5</sup> DI LI  <sup>5</sup> ANDREW SIEMION,<sup>4</sup> PENG JIANG,<sup>5</sup> DAN WERTHIMER  <sup>4,8</sup>  
JEFF COBB,<sup>4,8</sup> ERIC KORPELA,<sup>8</sup> AND DAVID P. ANDERSON<sup>8</sup>

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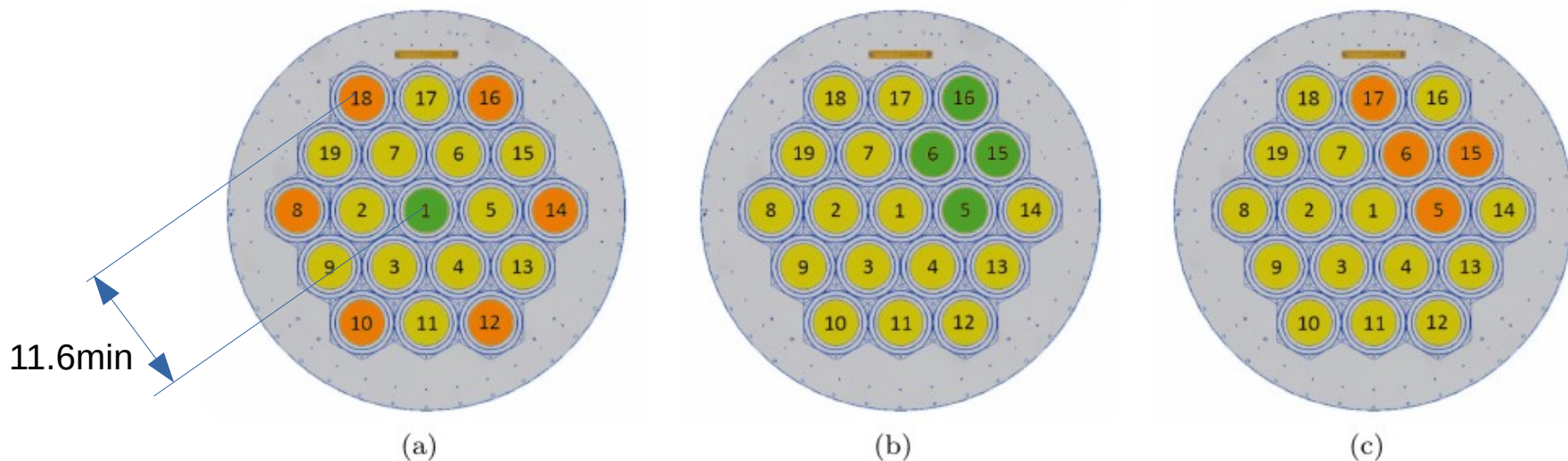
## ABSTRACT

As a major approach to looking for life beyond the Earth, the search for extraterrestrial intelligence (SETI) is committed to searching for technosignatures such as engineered radio signals that are indicative of technologically capable life. In this paper, we report a targeted SETI campaign employing an observation strategy named multi-beam coincidence matching (MBCM) at the Five-hundred-meter Aperture Spherical radio Telescope (FAST) towards 33 known exoplanet systems, searching for ETI narrow-band drifting signals across 1.05–1.45 GHz in two orthogonal linear polarization directions separately. A signal at 1140.604 MHz detected from the observation towards Kepler-438 originally piqued our interest because its features are roughly consistent with assumed ETI technosignatures. However, evidences such as its polarization characteristics are able to eliminate the possibility of an extraterrestrial origin. Our observations achieve an unprecedented sensitivity since the minimum equivalent isotropic radiated power (EIRP) we are able to detect reaches  $1.48 \times 10^9$  W.

19-beam receiver, 20 min/candidate

arXiv:2208.02421





**Figure 3.** Schematics of the MBCM strategy. (a) In MBCM targeted searches, an ETI signal detected by Beam 1 cannot appear in the 6 outermost beams, otherwise it is RFI. (b) An example of permitted signals in MBCM blind searches. (c) An example of forbidden signals in MBCM blind searches. Beams 5, 6 and 17 are arranged in a line, thus an extraterrestrial signal cannot cover them simultaneously.

### 3. DATA ANALYSIS

We record our data using the spectral line backend with the L-band 19-beam receiver across 1.0 – 1.5 GHz. The frequency resolution of the spectra is  $\sim 7.5$  Hz and the integration time of each spectrum is 10 seconds. Each FITS file contains four polarization channels of two spectra recorded by one beam, and the total volume of our data is 66.5 TB (including calibration observations). The FITS files of one beam observing one target are concatenated and converted into two Filterbank files (XX and YY), a data format accessible to the Blimp Python package (Price et al. 2019).

# Panoramic SETI: Program Update and High-Energy Astrophysics Applications

Jérôme Maire<sup>a</sup>, Shelley A. Wright<sup>a,b</sup>, Jamie Holder<sup>c</sup>, David Anderson<sup>d</sup>, Wystan Benbow<sup>e</sup>, Aaron Brown<sup>a</sup>, Maren Cosens<sup>a,b</sup>, Gregory Foote<sup>c</sup>, William F. Hanlon<sup>e</sup>, Olivier Hivet<sup>f</sup>, Paul Horowitz<sup>g</sup>, Andrew W. Howard<sup>h</sup>, Ryan Lee<sup>d</sup>, Wei Liu<sup>d,i</sup>, Rick Raffanti<sup>j</sup>, Nicolas Rault-Wang<sup>d,i</sup>, Remington P. S. Stone<sup>k</sup>, Dan Werthimer<sup>d,i</sup>, James Wiley<sup>a,b</sup>, and David A. Williams<sup>f</sup>

arXiv:2210.01356



Figure 2. Pictured here are two PANOSETI 0.5-m telescopes with one of the 12-m VERITAS telescopes (T4) in the background. Joint observations were performed in November 2021.

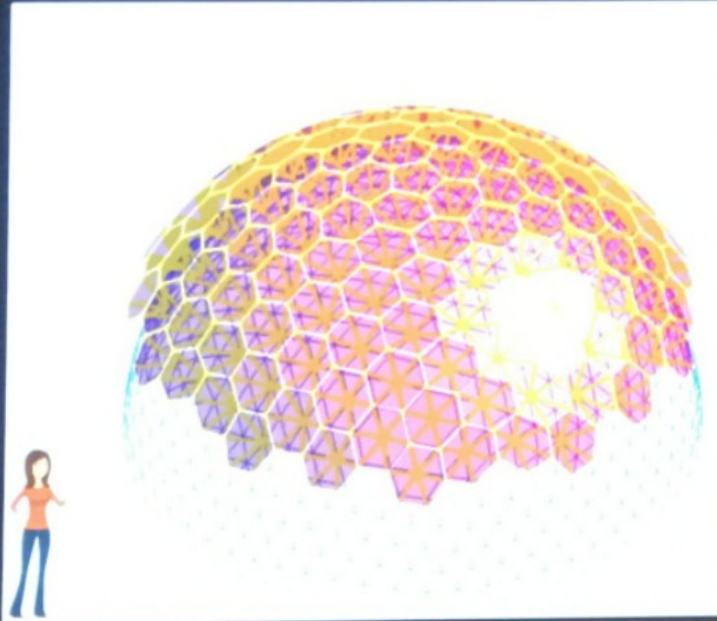


# PANO-SETI

All observable sky, all time.

Broadband (320-1700nm, UVA/Visible/NIR).  
High Time Resolution (nanosecond)

Field-of-view coverage



2017

IAC2017, Adelaide, Sept, 26<sup>th</sup> 2017, PANOSETI

## 2. PANOSETI: PROGRAM UPDATE

The PANOSETI experiment aims to observe 2,350 square degrees instantaneously by making use of multiple large field-of-view telescopes. PANOSETI is currently in its final design phase, and at final production two dedicated observatories will house 24 telescopes per site. Each part of the sky is observed simultaneously from two locations for direct detection and confirmation of optical transients.

$$\sqrt{2350} = 48^\circ$$