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A Search for Extra-Terrestrial Genomes

A life detection instrument
with biological components

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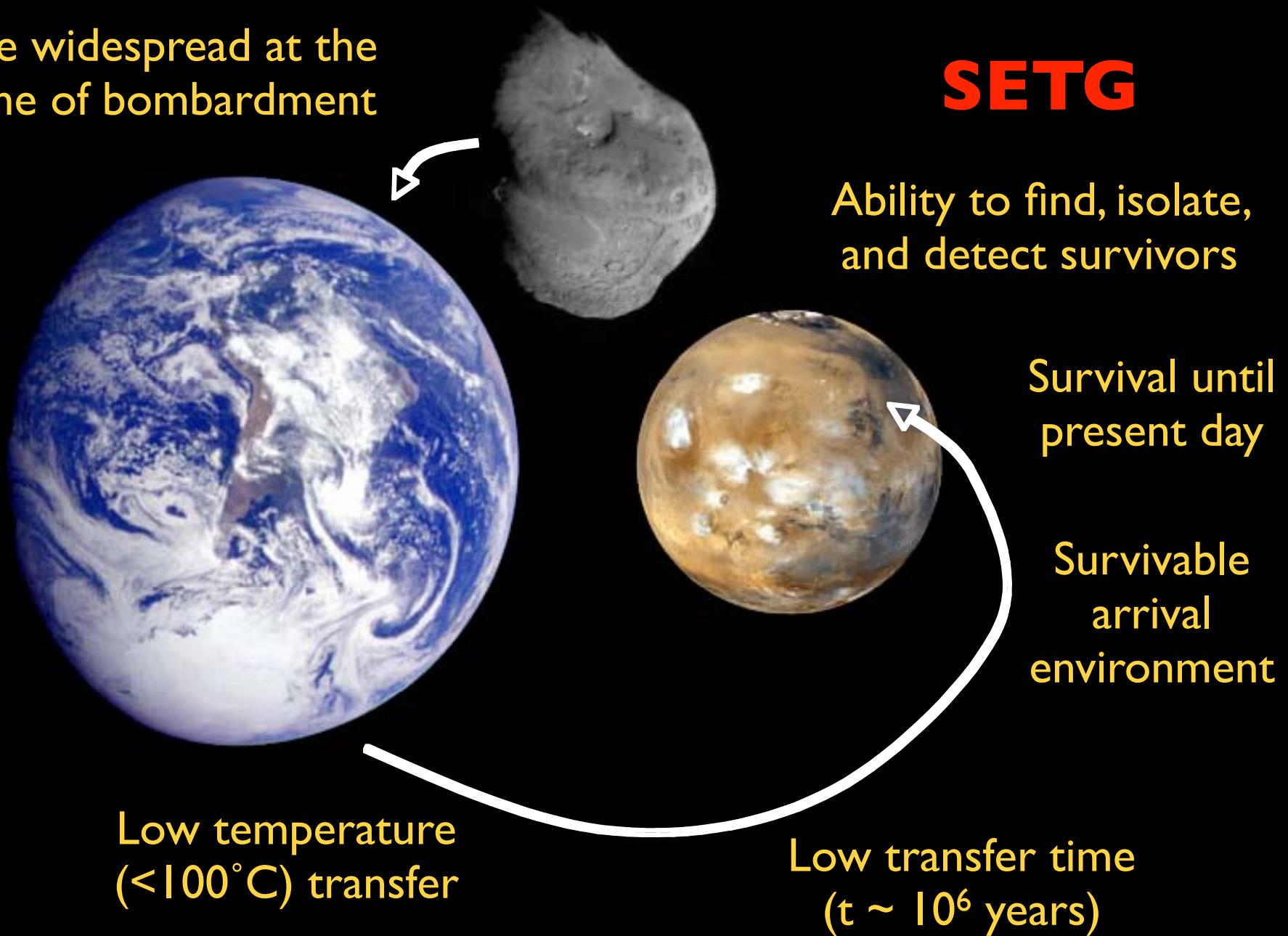
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Life on Mars may be related to life on Earth

Life widespread at the time of bombardment



Low transfer time
($t \sim 10^6$ years)

SETG

Ability to find, isolate,
and detect survivors

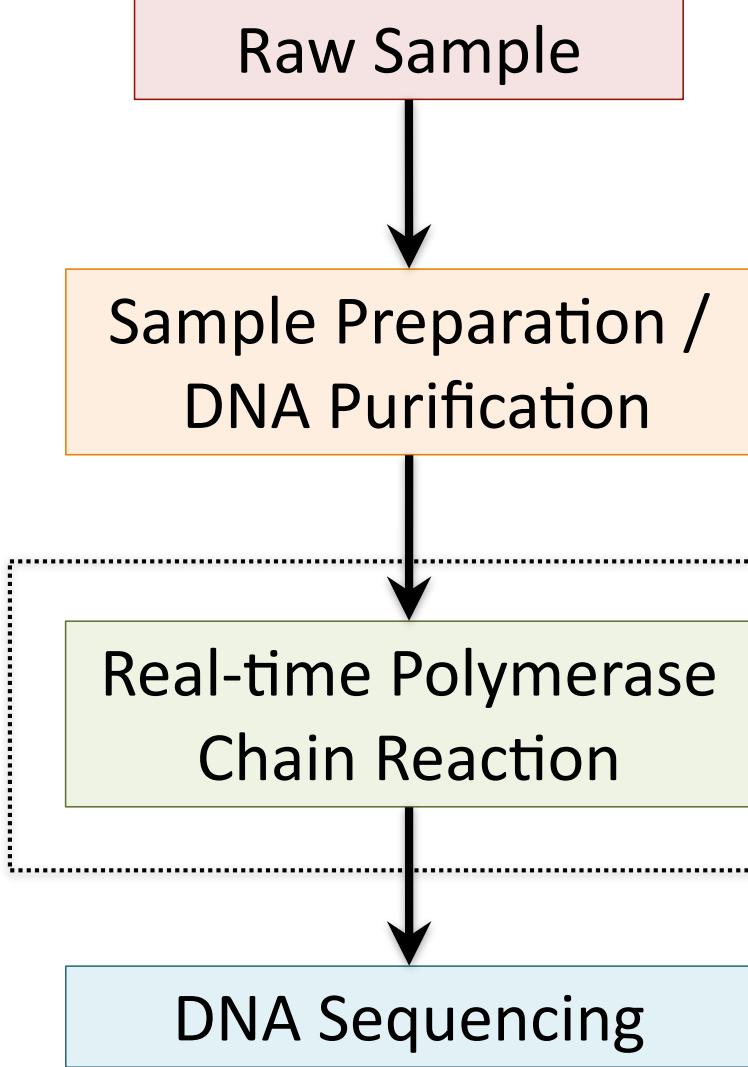
Survival until
present day

Survivable
arrival
environment

Low temperature
(<100°C) transfer

The Search for Extra-Terrestrial Genomes (SETG)

A life detection instrument with biological components



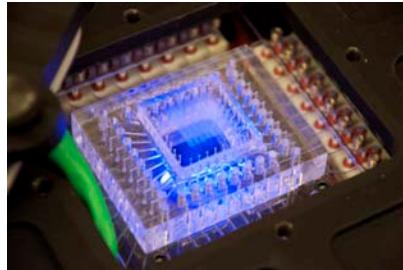
Current Prototype

Applications

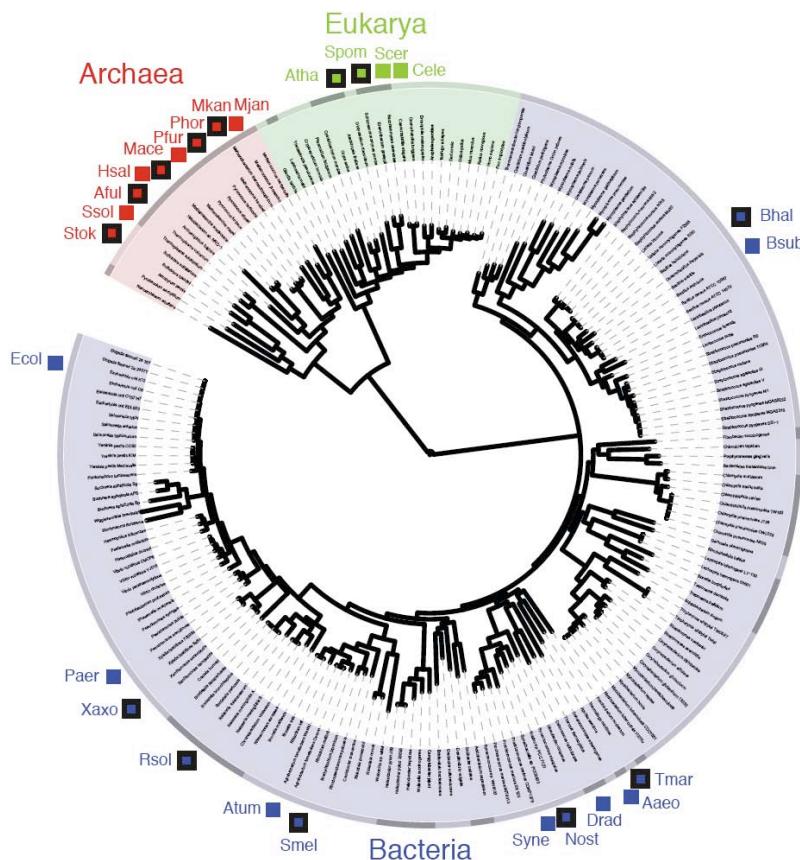
- Life detection on Mars
- Monitoring forward contamination
- Astronaut tool for diagnosis
- Monitoring of biological systems
- Portable sequencer for Earth



2005



Biological protocols
Highly conserved sequences



2010



Radiation Sensitivity

First field test

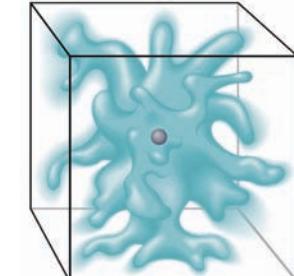


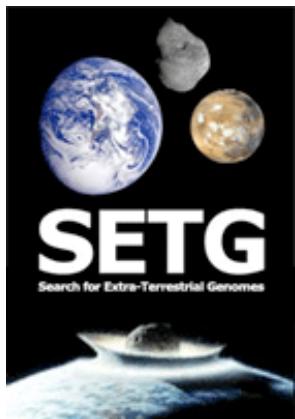
2016-2018

Miniature sequencer

Flight Proposal

On Mars?





Prof. Gary
Ruvkun



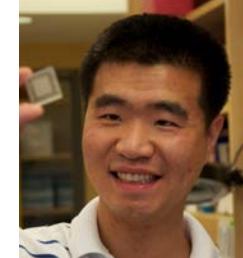
Prof.
Maria Zuber



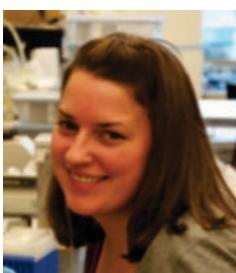
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