

AST251 Project 3 – Evaluating Claims of
Extraterrestrial Messaging
colli401
Planet 2

Thursday 9th April, 2099

We have identified what may be an indication of extraterrestrial intelligence, as well as the planet where it may have originated. This document summarizes the information gathered so far about the candidate message and its candidate planet of origin.

Potential evidence for extraterrestrial intelligence

Astronomers have detected a narrowband microwave transmission that appears to have originated from this planet’s solar system. The transmission is believed to contain an image and is displayed below with the most likely aspect ratio. The transmission has been observed to repeat itself regularly. The transmission is shown below:

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110000000000000000000000000000000000000000000000000000011
1100001110000000000000000000000000000000000000000000000011
11000111110001010000010000000010100000000000000000011
110001111101010101000100010000101010000000000000011
110001111100010100000000000000000100000000000000011
11000011100000000000000000000000000000000000000100000011
```

This signal was first noticed at UTC 2085-04-07/17:39.

Parameters of the candidate planet of origin and its host star

Spectral Type	G
Stellar Luminosity (Solar Units)	0.592
Stellar Mass (Solar Masses)	0.877
Distance to Star (lightyears)	1076.2
Planet Mass (Earth masses)	2.2
Atmospheric Pressure (atm)	6.4

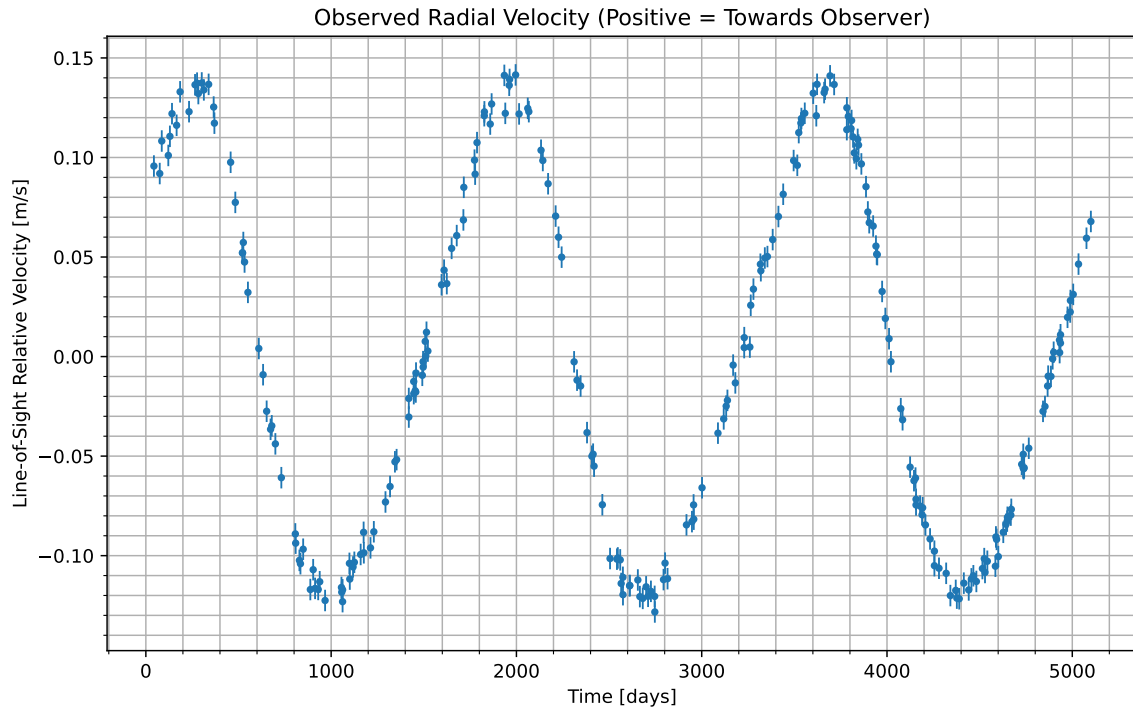


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2085-04-09/23:55. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
H_2S	45.9
N_2	10.7
CO_2	13.5
SO	17.3
SO_2	4.66
HF	0.126
CO	1.19
H_2SO_4	1.46
S_2O	0.000962
S_2O_2	8.45E-06

Gas Abundance (percent by volume)

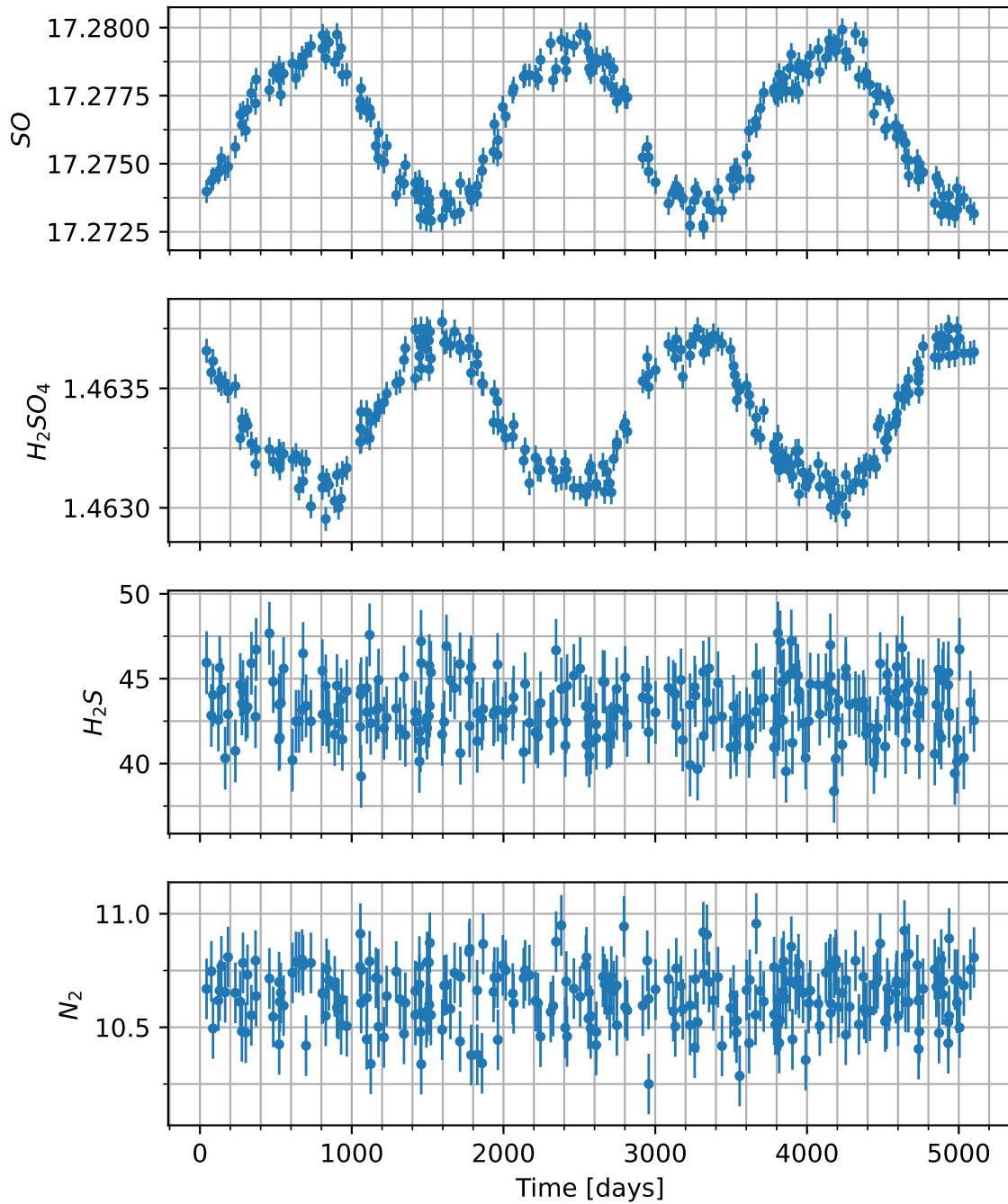


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

Gas Abundance (percent by volume)

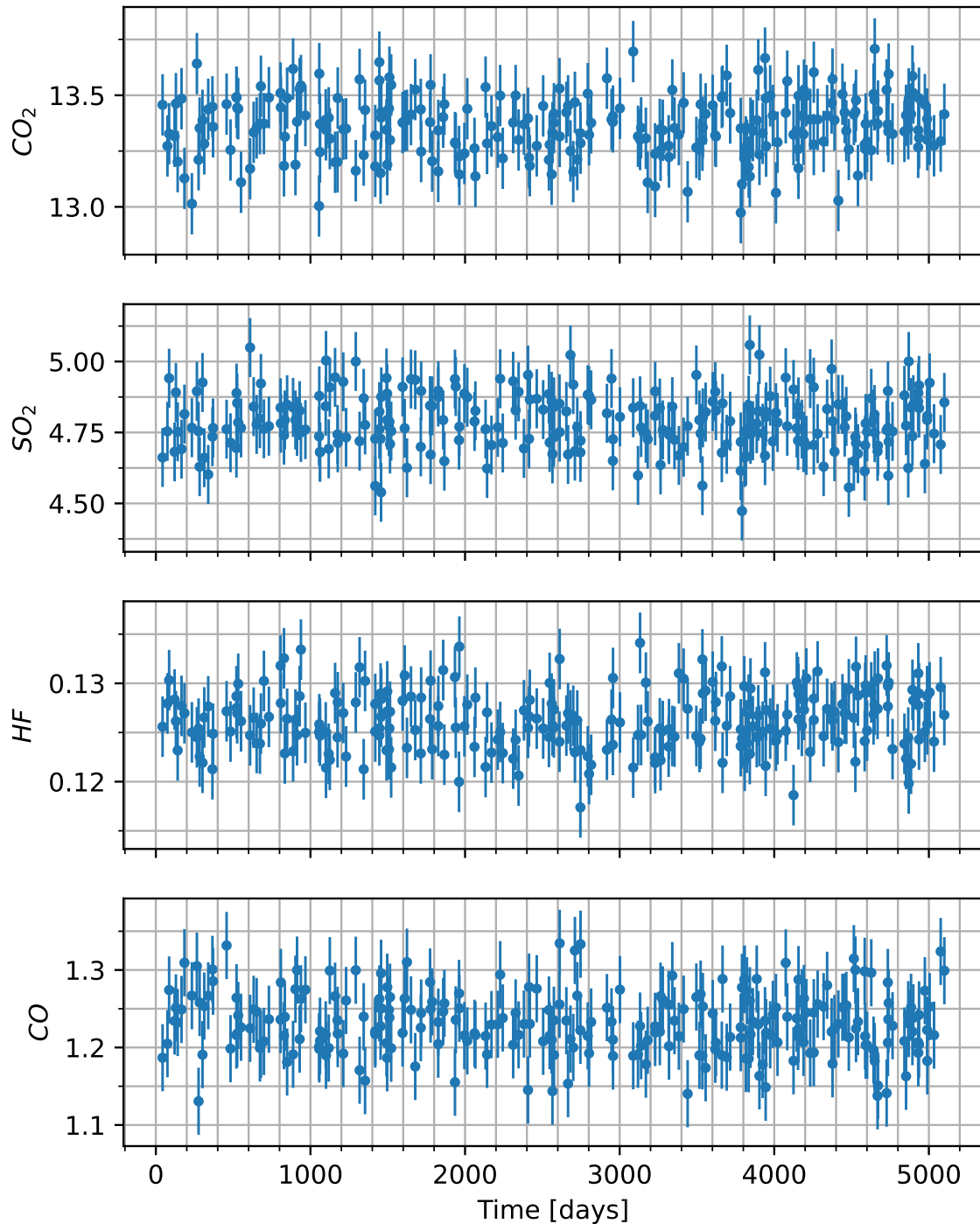


Figure 3: Concentration of various additional gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

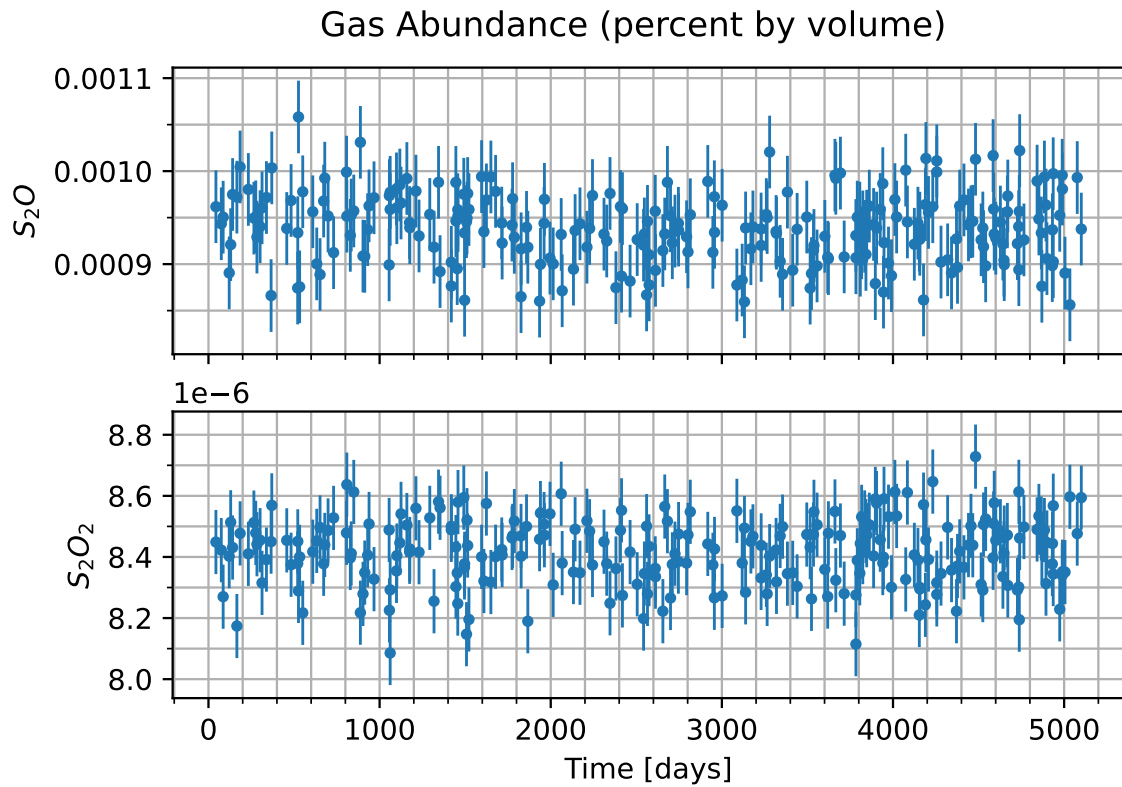


Figure 4: Concentration of various additional gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

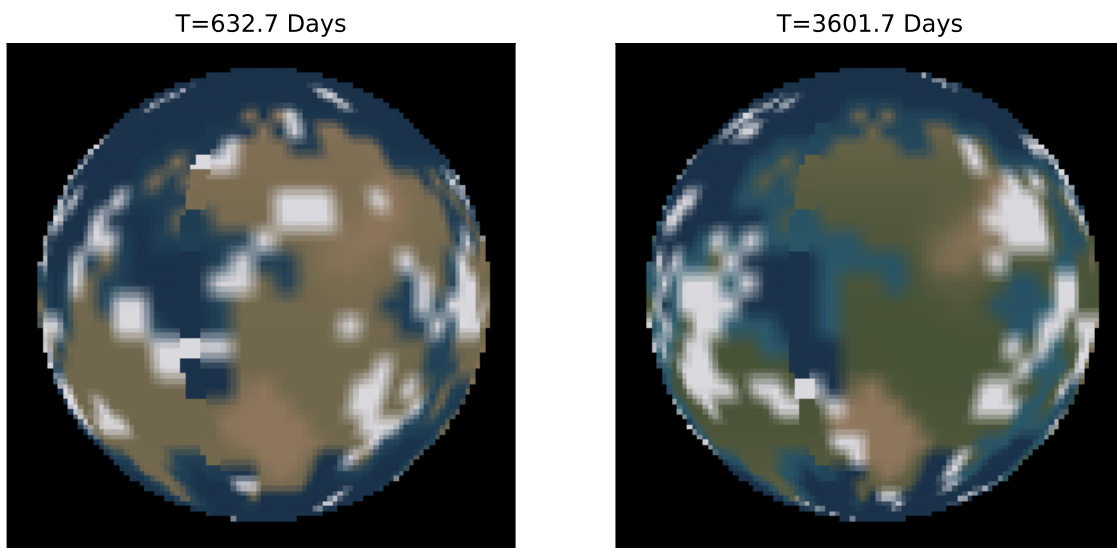


Figure 5: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to be liquid regions of some kind. Other colors present reflect the visible color as best as we are able to measure.