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

Tuesday 5th March, 2075

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 optical 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 lasted a short duration and then stopped. The transmission is shown below:

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11011001000000000000010000000001000000000011011
11011001000000000000010000000001000000000011011
11011001010101000000010000000001000000000011011
11011001010101001000100001000010000000000011011
11011001010100000000010000000001000000000011011
11011001000000000000010000000001000010000011011
11011001000000000000010000000001000000000011011
```

This signal was first noticed at UTC 2028-08-08/07:44.

Parameters of the candidate planet of origin and its host star

Spectral Type	F
Stellar Luminosity (Solar Units)	1.78
Stellar Mass (Solar Masses)	1.15
Distance to Star (lightyears)	1297.5
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	1.3

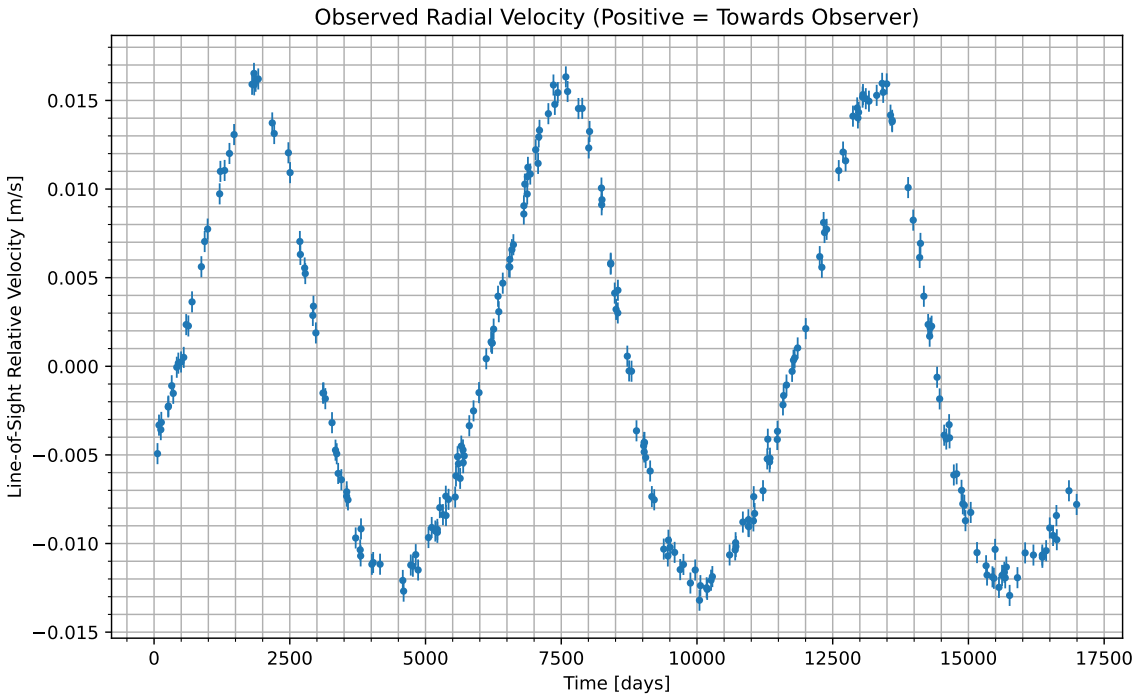

Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2028-08-09/06:56. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
CO_2	18
N_2	12.5
CO	13.6
CH_4	28.7
NH_3	14.7
HCN	12.2
$(CH_3)_2S$	0.000172
C_2H_6	0.271

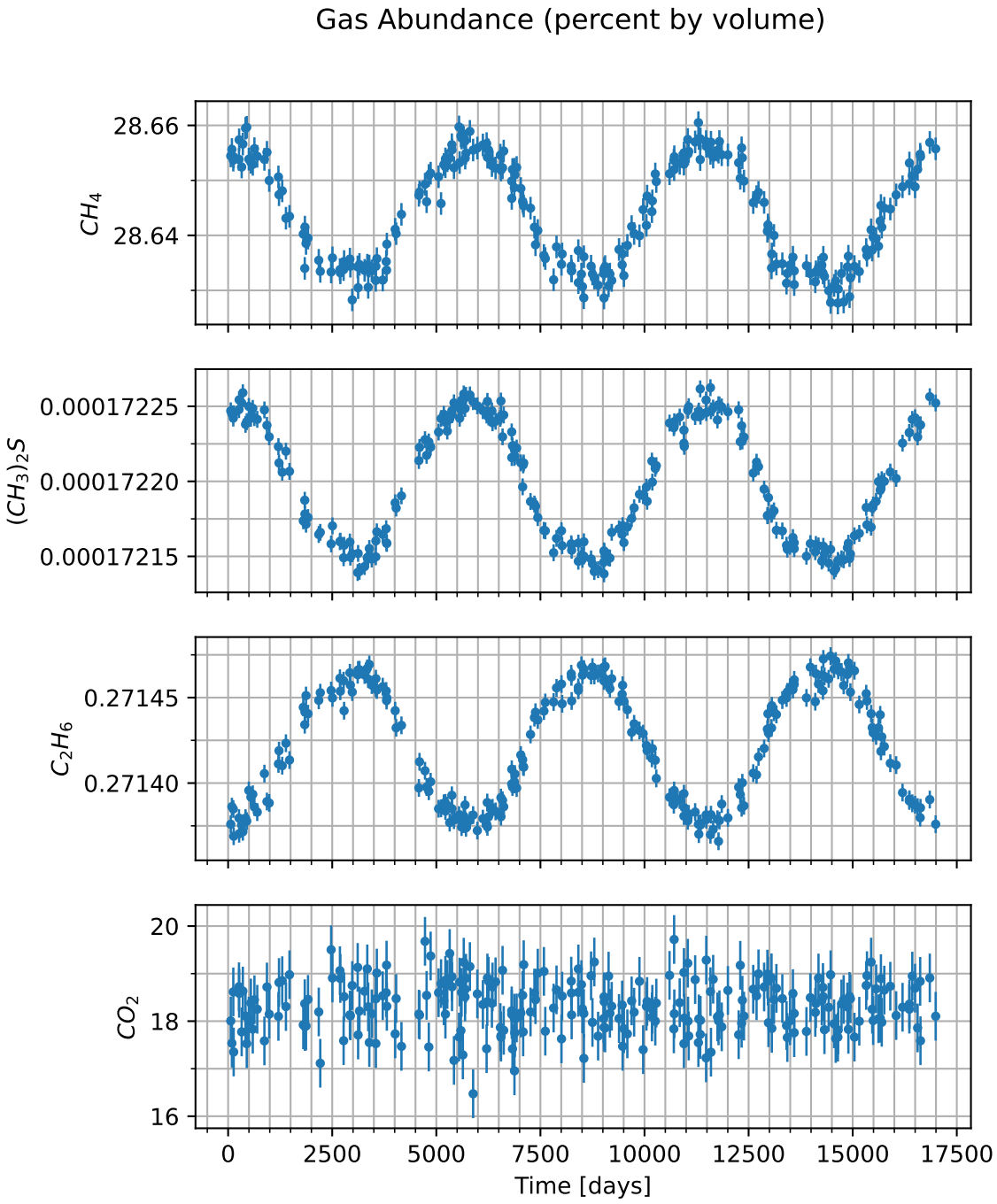

Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

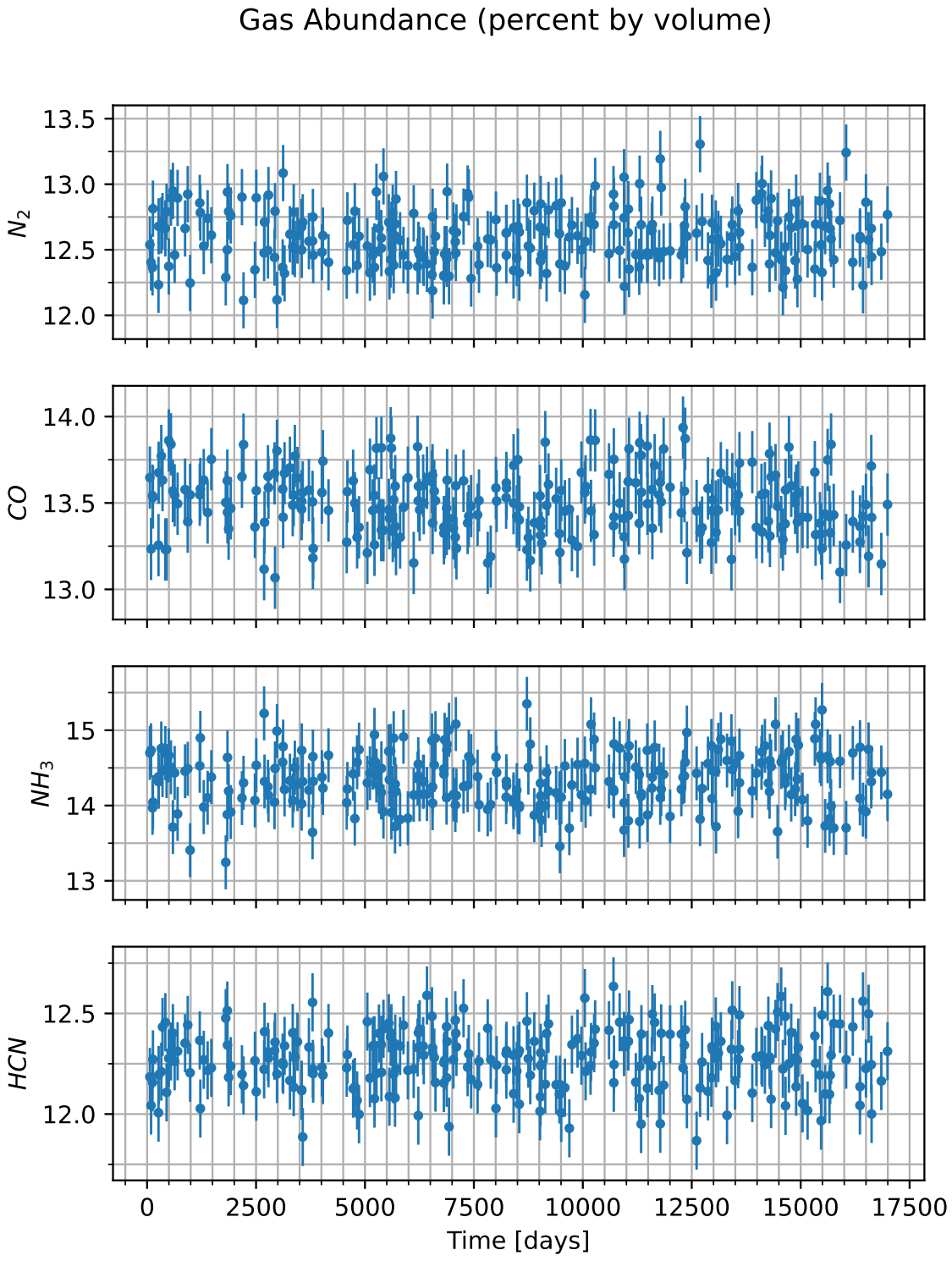

Figure 3: Concentration of various additional gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

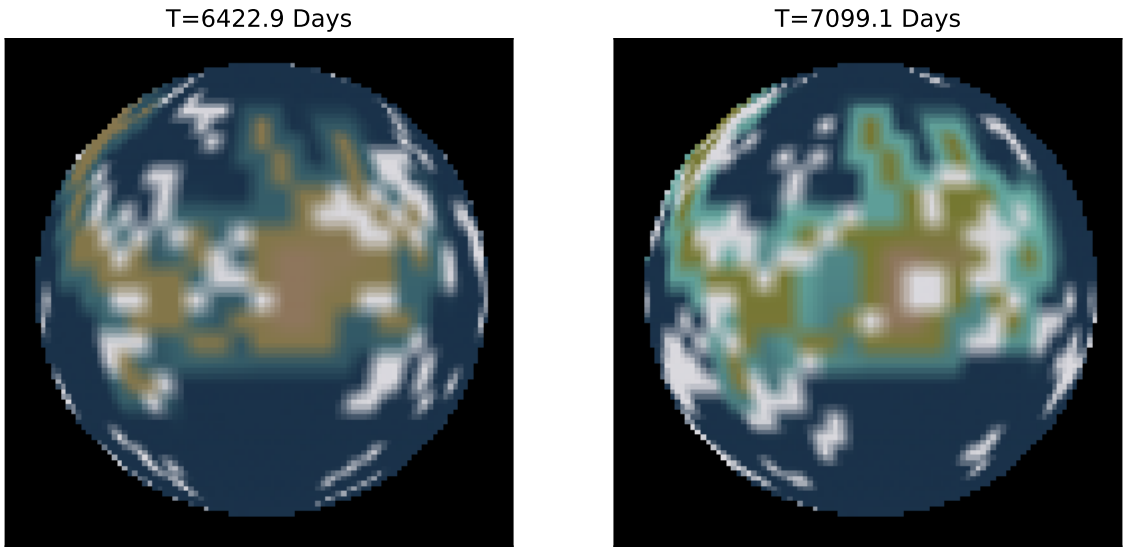

Figure 4: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to be liquid regions of some kind. Other colors present reflect the visible color as best as we are able to measure.