

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

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Planet 3

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**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 radio 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:

```
110000111111001000001001001011011110000010100100110110001100110001
11010011011010101100100010100110011011010101111011111110100101101
111000110011100001100001001001010001011110110111101100110011001001
000101001010111001101000100100110001101110101111010100000000100110
111110100011000100000001101100101101110111001101011000100110011000
101110110100010001111111011001000001010000111100111100110101001010
000100001110110011100111110000110000110100111010111010000101001001
10010111000000000111111011000101000011010101000101110110011110110
011001000111101111101110111000000100101101101101000001110100101101
```

This signal was first noticed at UTC 2090-03-17/08:52.

## Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.299
Stellar Mass (Solar Masses)	0.74
Distance to Star (lightyears)	128.2
Planet Mass (Earth masses)	2.2
Atmospheric Pressure (atm)	28.3

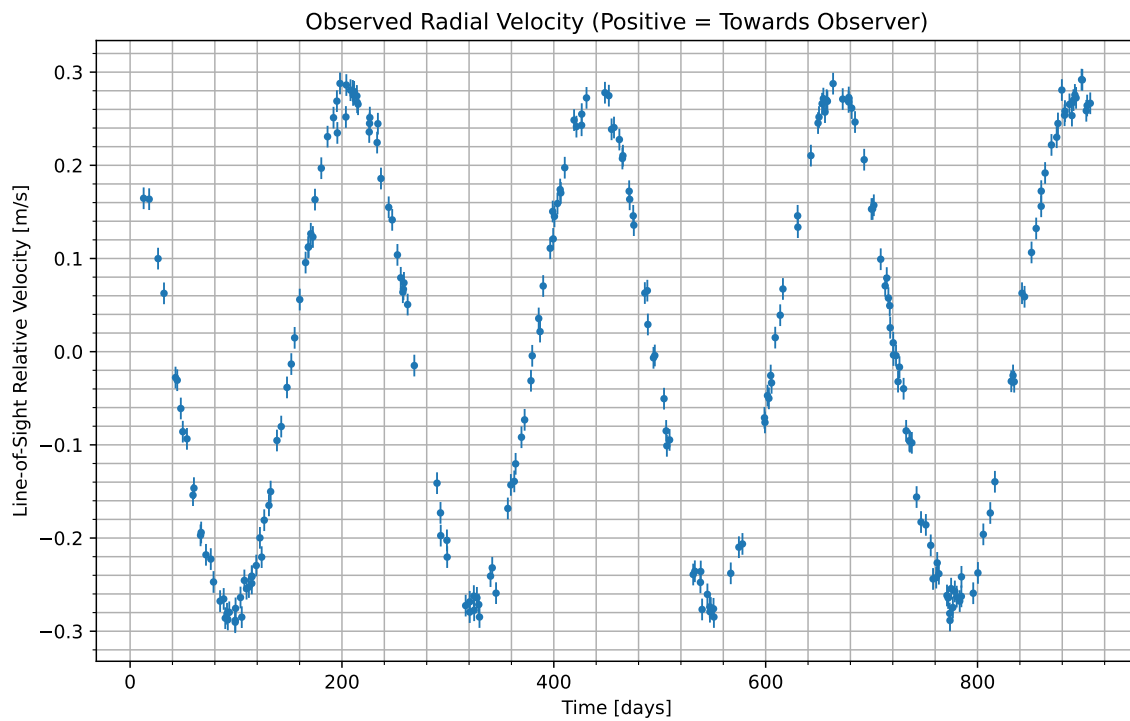


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2090-03-19/02:53. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

### Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
$N_2$	44.1
$CO_2$	35.6
$H_2O$	20.3

### Gas Abundance (percent by volume)

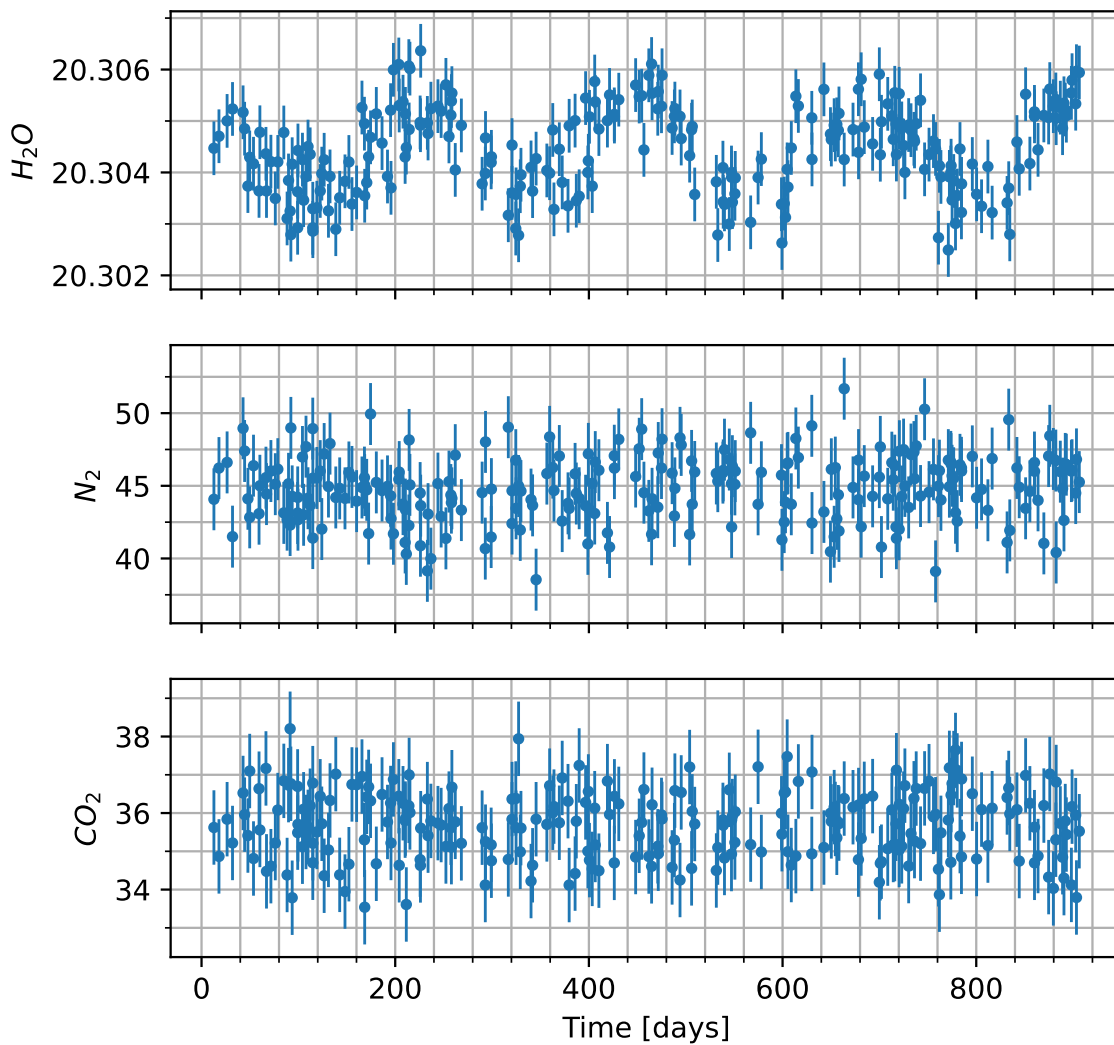


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

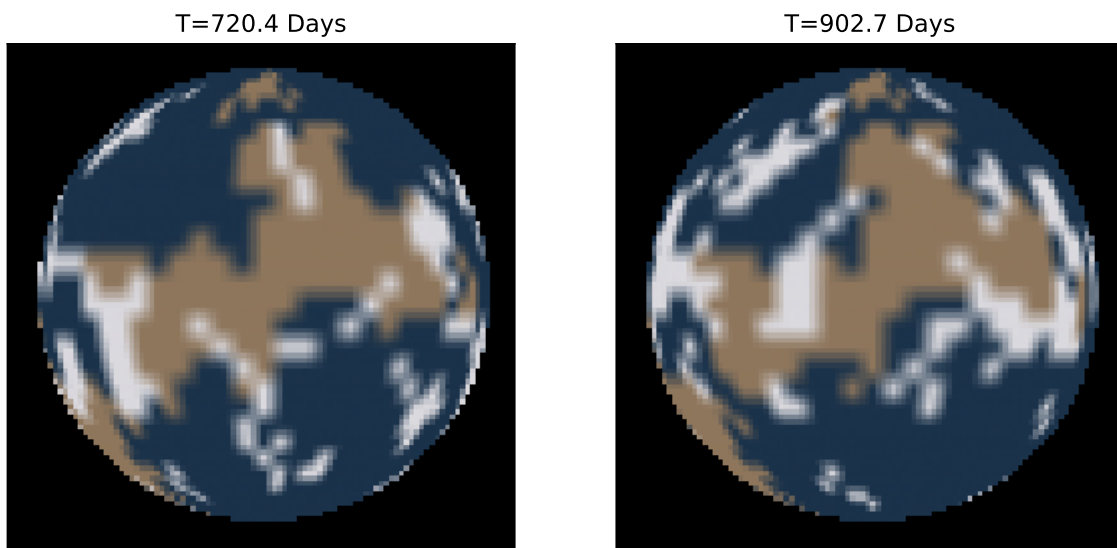


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to be liquid regions of some kind. Other colors present reflect the visible color as best as we are able to measure.