

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging liguanri Planet 1

Monday 16<sup>th</sup> February, 2088

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

```
110110111100011011110011000100000010010110100100100
100000100011001011010000011001011110101111010010111
10010110011111100011110101001001001101010011001001
11110000000011011110000001101000110110110101011010
01011110111011111000111111010110101010010001101101
01011011101111011001101011000011111111000011111100
011010111001110001111111001010100000101100001010111
```

This signal was first noticed at UTC 2086-03-28/17:08.

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

|                                  |       |
|----------------------------------|-------|
| Spectral Type                    | K     |
| Stellar Luminosity (Solar Units) | 0.371 |
| Stellar Mass (Solar Masses)      | 0.78  |
| Distance to Star (lightyears)    | 39.1  |
| Planet Mass (Earth masses)       | 2.7   |
| Atmospheric Pressure (atm)       | 3.7   |

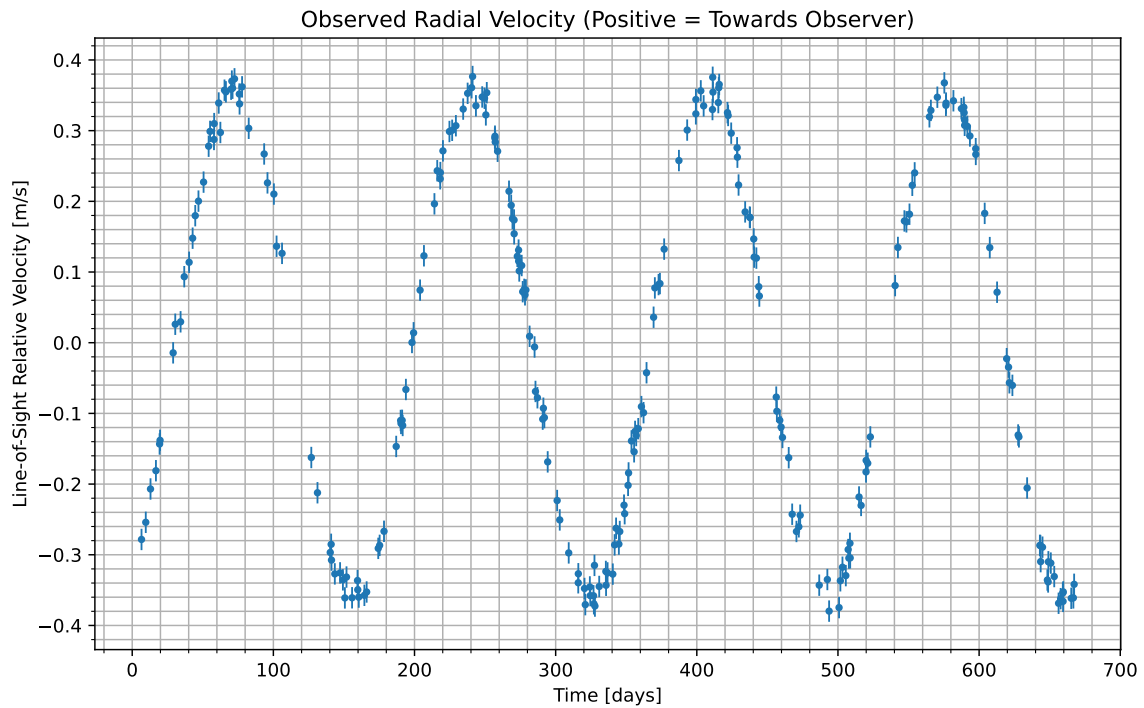


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2086-03-29/18:15. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

| Molecule | Concentration |
|----------|---------------|
| $N_2$    | 49.1          |
| $CO_2$   | 34.6          |
| $H_2O$   | 16.3          |

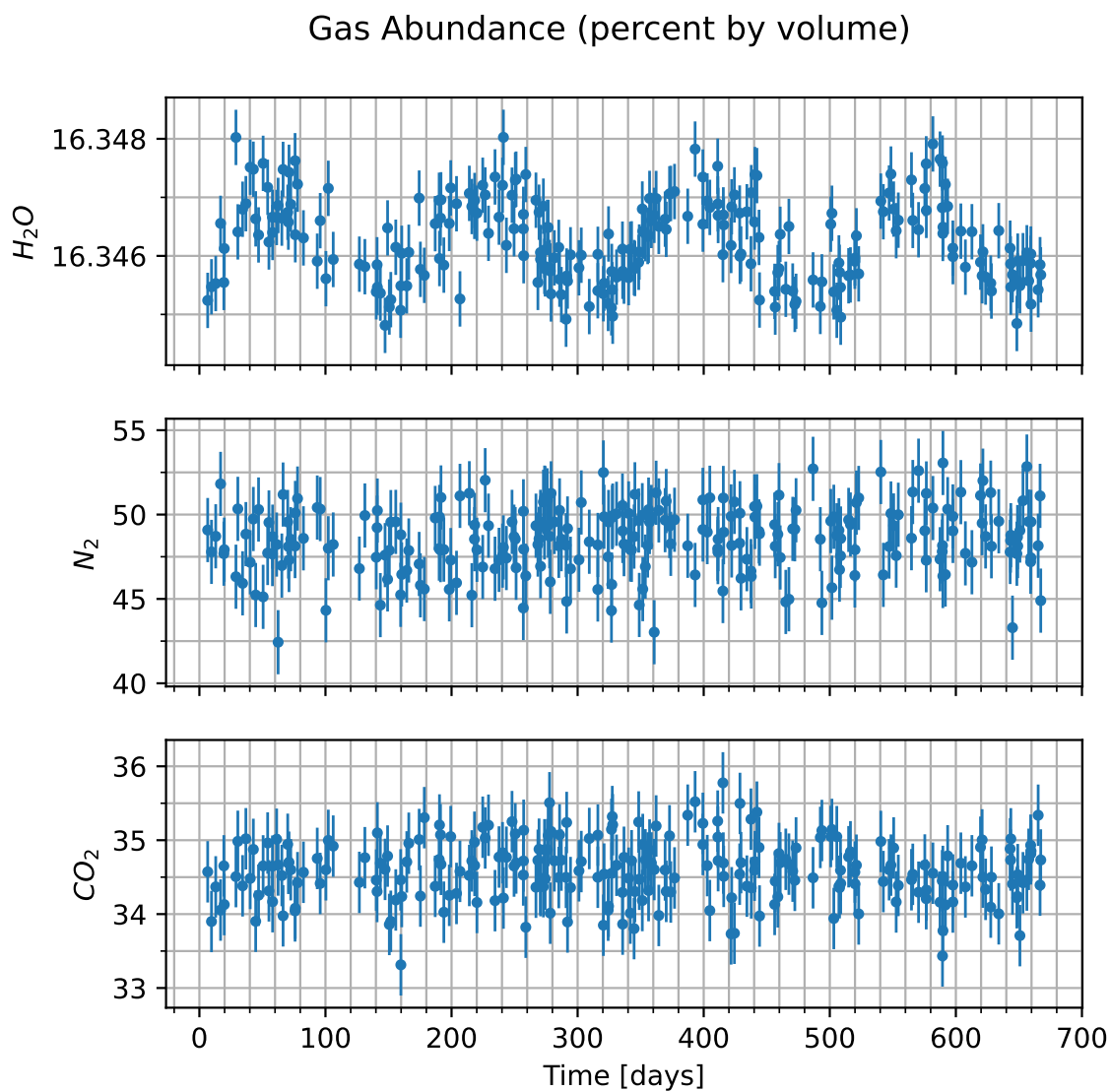


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

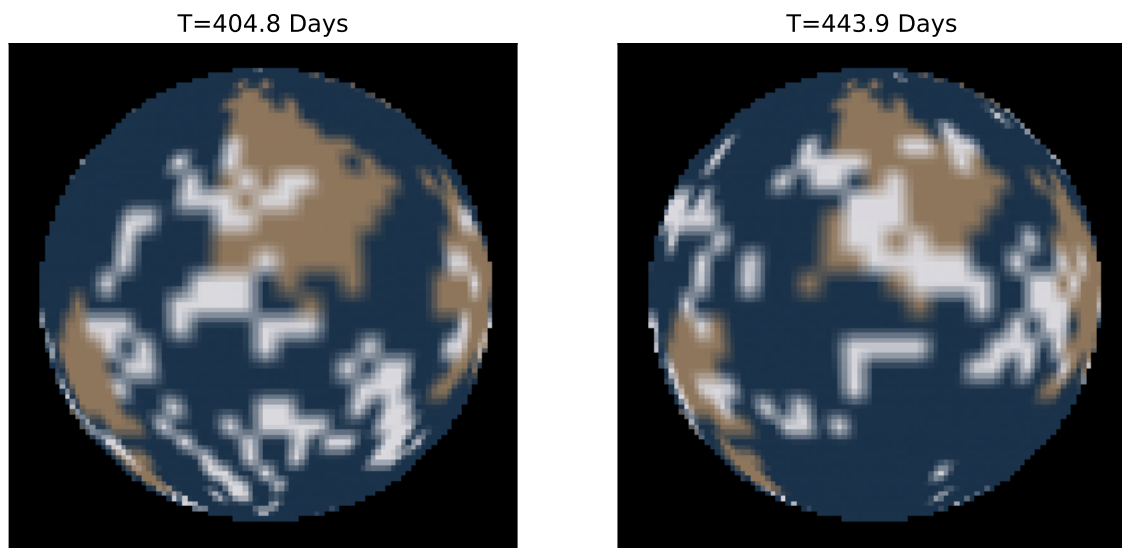


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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