**CLEA Exercise** [**https://sites.google.com/a/pulsarsearchcollaboratory.com/online-sessions-2012/home/session-2/clea-exercise**](https://sites.google.com/a/pulsarsearchcollaboratory.com/online-sessions-2012/home/session-2/clea-exercise)

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| **CLEA Virtual Radio Telescope—Observing Pulsars**Congratulations! You and your PSC colleagues have been awarded observing time on the 100-meter CLEA Virtual Radio Telescope to investigate 2 pulsars:1) “B0628-28” AKA “J0630-2834”2) Pulsar X, a new pulsar discovered at RA 20h18m3.84s Dec 28° 39’54”Your job is to:1. Determine the Period (P) of each pulsar
2. Determine the relationship for Period vs. Frequency, and Intensity vs. Frequency for each pulsar Compare the pulse time of arrival using receivers tuned to 400, 600 and 800 MHz for each pulsar
3. What’s in a name? Guess the catalog name of Pulsar X.

**Below are tables and a form for you to work with.****Copy these tables into a spreadsheet of your own and fill it out using data you take with the 'GBT.'****Data table for Pulsar X**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  Frequency of the Receiver(MHz) |  TOA of the first pulse |  TOA of the last pulse |  # of pulses |  Relative Intensity of Pulsar X |
|  400 |   |   |   |   |
|  600 |   |   |   |   |
|  800 |   |   |   |   |
|  1000 |   |   |   |   |
|  1200 |   |   |   |   |
|  1400 |   |   |   |   |

**Data table for J0630-2834**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  Frequency of the Receiver(MHz) |  TOA of the first pulse |  TOA of the last pulse |  # of pulses |  Relative Intensity of Pulsar J0630-2834 |
|  400 |   |   |   |   |
|  600 |   |   |   |   |
|  800 |   |   |   |   |
|  1000 |   |   |   |   |
|  1200 |   |   |   |   |
|  1400 |   |   |   |   |

**Using your analysis of the data, complete the form below.** |

# CLEA - Observing Pulsars Exercise

Your username (**pulsar.astronomer@pulsarsearchcollaboratory.com**) will be recorded when you submit this form. Not **pulsar.astronomer**? [Sign out](https://docs.google.com/logout)

\* Required

Top of Form

What is the period of Pulsar X? \* 

What is the period of J0630-2834? \* 

From your measurements, what is the relationship between frequency and the period of a pulsar? \* 

From your measurements, what is the relationship between intensity of the pulsar signal and frequency? \* 

From your measurements , how does the time of arrival of a pulse change with frequency? \* 

So what is the name of Pulsar X? \* 

Extra Credit: This all ties into Dispersion Measure. Which of these pulsars has the greatest DM? Go here: http://astronomy.swin.edu.au/cms/astro/cosmos/p/Pulsar+Dispersion+Measure

* J0630-2834
* Pulsar X

How did you determine that? 

Send me a copy of my responses.

Never submit passwords through Google Forms.

Bottom of Form