

CALIFORNIA STATE SCIENCE FAIR

2001 PROJECT SUMMARY



Your Name (List all student names if multiple authors.)

Brian Rocha; Ryan Stephens

Science Fair Use Only

J1420

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)

Electromagnetic Radio Signals From Space

Division

J Junior (6-8) J Senior (9-12)

Preferred Category (See page 5 for descriptions.)

14 - Physics & Astronomy

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Objective: The objective of our project was to find out which planet emits the strongest electromagnetic radio signals. We believe that among Jupiter, Saturn and Venus, Jupiter will generate the strongest electromagnetic radio signal due to the fact that it is the planet with the most violent storms.

Materials and Methods: We constructed a radio signal receiver made of wood, copper tubing, wire mesh, and electrical wire. We positioned the *receiver* at Jupiter, Saturn, or Venus and recorded their data on three days. We used a short wave radio and kept the volume at the same setting for each trial. We recorded the signals on a tape recorder, placed them into the computer, and used computer tools to analyze the signal strength.

Results: The signal strength analysis showed that Saturn, not Jupiter, gave off the strongest electromagnetic radio signals. Venus gave off the weakest signals among all three planets.

Discussion: The results proved our hypothesis incorrect. We suspect that we did not get the most violent part of Jupiter's storms. It was difficult to get more signals because of the weather at the time we did the project. It is possible that at a different time of year, or with more tests, the results would be different.

Summary Statement (In one sentence, state what your project is about.)

This project compared the strengths of radio signals emitted by Jupiter, Saturn, and Venus.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

Parents helped build antenna (sawing and soldering). Plans for antenna were obtained from the internet.