

## Policy Document on Observation of Conjunction of Jupiter and Saturn


### Introduction:

On December 21st, 2020, the Department of Physics at Nutan Mahavidyalaya in Selu, Dist. Parbhani, organized a special event for the staff to observe the rare conjunction of Jupiter and Saturn. This astronomical phenomenon, occurring approximately every 20 years, results from the alignment of Jupiter's 12-year orbital period and Saturn's 30-year orbital period. During this event, the two planets appeared exceptionally close in the evening sky, with a separation of just  $0.1^\circ$ , making it the closest conjunction since 1623. The observation took place on the shortest day of the year, providing an excellent opportunity to witness this remarkable celestial event.

Sr. No	Name	Designation	Post
1	Dr. Sharad S. Kulkarni	Principal	Chairmen
2	Dr. Nirmala S. Padmavat	Director, IQAC	Coordinator
3	Dr. Bhagwat Kumthekar	Assistant Professor (Physics)	Co-Coordinator

### Aims:

The aim of organizing the event on December 21st, 2020, by the Department of Physics at Nutan Mahavidyalaya in Selu, Dist. Parbhani, was to provide staff members with an opportunity to observe and appreciate the rare conjunction of Jupiter and Saturn. This astronomical phenomenon, occurring approximately every 20 years, results from the alignment of Jupiter's 12-year orbital period and Saturn's 30-year orbital period. The event aimed to enhance understanding and interest in celestial events by showcasing the closest conjunction of these planets since 1623, with a separation of just  $0.1^\circ$ . Held on the shortest day of the year, the observation highlighted the significance and beauty of this rare alignment in the evening sky.

  
PRINCIPAL  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani



**NUTAN MAHAVIDYALAYA, SELU -431503**  
**DIST. PARBHANI**

Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.  
NAAC Re-accredited B+ Grade

**Dr. Uttam Rathod**

Principal

Mobile No. 9421383319  
Email - principalnutan@rediffmail.com



### Steps involved in this program:

- **Planning and Coordination:**

The Department of Physics initiated the planning process by selecting the date and time for the observation event. Coordination with staff members was conducted to ensure their availability and participation.

- **Procurement of Equipment:**

Telescopes and binoculars were arranged to provide a clear view of the conjunction. Additional observational aids such as star charts and software for tracking celestial events were prepared.

- **Site Preparation:**

A suitable observation site with minimal light pollution was chosen within the campus. Arrangements were made for setting up the equipment and ensuring the comfort of the participants.

- **Educational Session:**

Prior to the observation, a brief educational session was conducted to explain the significance of the conjunction. Information on the orbital periods of Jupiter and Saturn, as well as the historical context of such conjunctions, was shared.

- **Observation:**

Participants gathered at the designated site in the evening. Telescopes and binoculars were set up, and staff members were guided on how to use them effectively. The conjunction was observed, with participants taking turns to view the planets through the equipment.

- **Discussion and Analysis:**

After the observation, a discussion session was held to share experiences and observations. The scientific implications of the conjunction and its rarity were discussed.

- **Documentation and Reporting:**

The event was documented through photographs and written reports. Feedback from the participants was collected to assess the success of the event and gather suggestions for future programs.

PRINCIPAL  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani





**NUTAN MAHAVIDYALAYA, SELU -431503  
DIST. PARBHANI**

**Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.**  
NAAC Re-accredited B+ Grade

**Dr. Uttam Rathod**

Principal

Mobile No. 9421383319

Email - principalnutan@rediffmail.com



### Methods involved in this program:

#### Event Planning:

- Identify the date and time of the conjunction.
- Coordinator with staff to ensure participation.
- Develop a schedule for the event.

#### Equipment Setup:

- Procure telescopes, binoculars, and other necessary observational tools.
- Ensure the availability of star charts and astronomical tracking software.

#### Site Selection and Preparation:

- Choose an observation site with minimal light pollution within the campus.
- Set up equipment at the site, ensuring optimal positioning for viewing the conjunction.

#### Educational Preparation:

- Conduct research on the conjunction and its significance.
- Prepare educational materials, including information on the orbital periods of Jupiter and Saturn, historical context, and details of the current conjunction.

#### Participant Orientation:

- Conduct a briefing session for participants to explain the purpose of the event and provide instructions on using the equipment.
- Distribute educational materials and star charts.

#### Observation Process:

- Begin observation at the designated time, guiding participants in using the telescopes and binoculars.
- Monitor the position of the planets using astronomical tracking software to ensure accurate viewing.

PRINCIPAL

**Nutan Mahavidyalaya  
SELU, Dist. Parbhani**







**NUTAN MAHAVIDYALAYA, SELU -431503  
DIST. PARBHANI**

**Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.**  
NAAC Re-accredited B+ Grade

**Dr. Uttam Rathod**

Principal

Mobile No. 9421383319

Email - principalnutan@rediffmail.com



### **Data Collection:**

- Document the event with photographs and notes on observations made by participants.
- Collect feedback and experiences from participants during and after the observation.

### **Discussion and Analysis:**

- Hold a post-observation session to discuss the observations and their significance.
- Analyze the data collected and compare it with expected results.

### **Documentation and Reporting:**

- Compile a report detailing the event, observations, participant feedback, and conclusions drawn from the discussion.
- Share the report with the department and participants for future reference and learning.

### **Tools and Techniques of this activity:**

#### **Telescopes:**

- High-quality telescopes were used to provide clear and magnified views of Jupiter and Saturn.
- Participants were guided on how to adjust the focus and alignment to observe the planets in detail.

#### **Binoculars:**

- Binoculars were made available for a broader, yet magnified, view of the conjunction.
- Instructions were provided on how to stabilize the binoculars for better viewing.

#### **Star Charts:**

- Star charts were distributed to help participants identify the location of Jupiter and Saturn in the night sky.

  
PRINCIPAL  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani





**NUTAN MAHAVIDYALAYA, SELU -431503**  
**DIST. PARBHANI**

**ANNA UNIVERSITY OF TECHNOLOGY, COIMBATORE**  
HAAC Re-accredited B+ Grade

**Dr. Uttam Rathod**  
Principal



Mobile No. 9421303319  
Email - principalnutan@rediffmail.com

- These charts included information on other visible celestial objects to enhance the educational experience.

#### **Astronomical Tracking Software:**

- Software applications were used to track the real-time positions of Jupiter and Saturn.
- The software helped ensure accurate timing and positioning for the observation.

#### **Cameras and Smartphones:**

- Cameras and smartphones were used to capture photographs of the conjunction.
- Participants were encouraged to share their images and experiences.

#### **Educational Materials:**

- Informational brochures and presentations were prepared to educate participants about the conjunction, the orbital periods of Jupiter and Saturn, and the historical significance of such events.

#### **Observation Techniques:**


- Proper techniques for using telescopes and binoculars were demonstrated.
- Tips on how to stabilize the viewing equipment and adjust to night vision were provided.
- Participants were instructed on how to take notes and record their observations.

#### **Data Recording:**

- Notebooks and recording sheets were provided for participants to document their observations and experiences.
- Participants were encouraged to note the time, position, and any notable features of the planets during the conjunction.

#### **Post-Observation Discussion:**

- A session was held to discuss the observations and share insights.
- Participants compared their notes and discussed the significance of their findings.

  
PRINCIPAL  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani





**NUTAN MAHAVIDYALAYA, SELU -431503**  
**DIST. PARBHANI**

Affiliated to Swami Ramchand Teerth Marathwada University, Nanded.  
NAAC Re-accredited B+ Grade

**Dr. Uttam Rathod**

Principal

Mobile No. 9421383319

Email - principalnutan@rediffmail.com



### Materials Available for conducting this activity:

- **Telescopes:**

High-quality telescopes to provide clear, magnified views of Jupiter and Saturn.

- **Binoculars:**

Binoculars for a broader, yet enhanced, view of the conjunction.

- **Star Charts:**

Detailed star charts to help participants identify the location of Jupiter and Saturn in the night sky.

- **Astronomical Tracking Software:**

Software applications for real-time tracking of the planets' positions, ensuring accurate timing and alignment.

- **Cameras and Smartphones:**

Digital cameras and smartphones for capturing photographs and videos of the conjunction.

- **Educational Brochures:**

Informative brochures providing background on the conjunction, the orbital periods of Jupiter and Saturn, and the historical significance of such events.

- **Presentation Materials:**

Visual aids, including slides and diagrams, to explain the science behind the conjunction and its occurrence.

- **Notebooks and Recording Sheets:**

Notebooks and sheets for participants to document their observations and insights.

- **Lighting Equipment:**

Red LED flashlights to preserve night vision while allowing participants to read star charts and take notes.

- **Seating Arrangements:**

Chairs and mats for comfortable viewing during the observation

- **Refreshments:**

Light snacks and drinks to keep participants engaged and comfortable throughout the event.

- **First Aid Kit:**

A basic first aid kit for any minor medical needs during the event

PRINCIPAL

Nutan Mahavidyalaya  
SELU, Dist. Parbhani







**NUTAN MAHAVIDYALAYA, SELU -431503  
DIST. PARBHANI**

Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.  
NAAC Re-accredited U\* Grade

**Dr. Uttam Rathod**

Principal

Mobile No. 9421383319

Email - principalnutan@rediffmail.com



### Outcomes of this activity:

The special event organized by the Department of Physics at Nutan Mahavidyalaya in Selu, Dist. Parbhani, on December 21st, 2020, to observe the rare conjunction of Jupiter and Saturn yielded several positive outcomes:

- **Enhanced Understanding of Astronomical Events:**

Participants gained a deeper understanding of celestial mechanics, specifically the orbital periods of Jupiter and Saturn and how their alignment results in a conjunction.

- **Increased Interest in Astronomy:**

The event sparked greater interest and enthusiasm for astronomy among the staff, encouraging further exploration and learning about other astronomical phenomena.

- **Successful Observation Experience:**

The clear evening sky and well-prepared equipment allowed participants to observe the conjunction with a separation of just  $0.1^\circ$ , making it a memorable experience.

- **Educational Value:**

The educational session and materials provided background knowledge and context, enhancing the overall learning experience and appreciation of the event.

- **Community Building:**

The event fostered a sense of community and collaboration among the staff, as they shared observations, discussed the significance of the conjunction, and enjoyed the rare celestial event together.

- **Skill Development:**

Participants developed practical skills in using telescopes and binoculars, as well as in identifying celestial objects using star charts and astronomical software.

- **Documentation and Reporting:**

The event was thoroughly documented through photographs and written reports, creating a valuable record for future reference and for sharing with others who could not attend.

- **Future Planning:**

The success of the event encouraged the planning of similar astronomical observation activities, promoting continuous engagement with astronomy and science education.

PRINCIPAL

Nutan Mahavidyalaya  
SELU, Dist. Parbhani





**NUTAN MAHAVIDYALAYA, SELU -431503  
DIST.PARBHANI**

Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.  
NAAC Re-accredited B+ Grade

**Dr.Uttam Rathod**

Principal

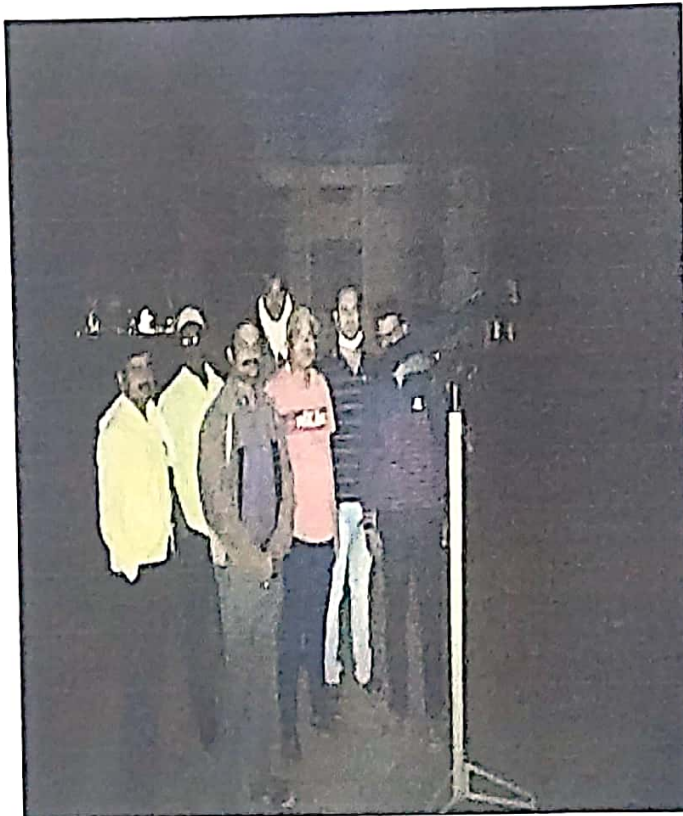
Mobile No. 9421383319  
Email - principalnutan@rediffmail.com



### Conclusion:

On December 21st, 2020, the Department of Physics at Nutan Mahavidyalaya in Selu, Dist. Parbhani, successfully organized an event for the staff to observe the rare conjunction of Jupiter and Saturn. This conjunction, occurring approximately every 20 years, is a result of the alignment of Jupiter's 12-year orbital period and Saturn's 30-year orbital period. The 2020 conjunction was particularly remarkable due to the planets' close separation of just  $0.1^\circ$ , making it the closest such event since 1623. By scheduling the observation on the shortest day of the year, participants were able to maximize their viewing time and experience this extraordinary astronomical phenomenon in the evening sky.

### Evidence of Success:



**PRINCIPAL**  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani







**NUTAN MAHAVIDYALAYA, SELU -431503  
DIST.PARBHANI**

**Affiliated to Swami Ramanand Teerth Marathwada University, Nanded  
NAAC Re-accredited B+ Grade**

**Dr.Uttam Rathod**

Principal

Mobile No. 9421383319

Email - principalnutan@rediffmail.com



**PRINCIPAL  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani**





**NUTAN MAHAVIDYALAYA, SELU -431503  
DIST. PARBHANI**

**Affiliated to Swami Ramanand Teerth Marathwada University, Nanded.  
NAAC Re-accredited B+ Grade**

**Dr. Uttam Rathod**

Principal

Mobile No. 9421383319

Email - principalnutan@rediffmail.com



*NS  
Ladmoat*

**IQAC Coordinator**

**Director  
IQAC**

**Nutan Mahavidyalaya, Seiu**

*Dr. Uttam Rathod*

**Principal**

**PRINCIPAL  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani**

*Dr. Uttam Rathod*

**PRINCIPAL  
Nutan Mahavidyalaya  
SELU, Dist. Parbhani**

