Overview

The **Icy Satellites Sections in Cassini Mission Final Report We’ll get this later**  summarizes the status of Saturn's icy satellites, in 2018, as a result of Cassini exploration of the Saturn system. It also includes open questions that will be explored by future scientists.

**The following were linked. See** [**https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html**](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html)

**Body Code Mean Radius Semi-Major Axis Type Cassini Observations**

Titan TI 2575 1,221,865 Major Moon Titan web page

**Rhea RH 764 527,068 Icy Moon Rhea**

**ETC.**

**Icy Satellite Data**

This section includes a comprehensive list of all of the search tools and data archives related to icy satellite studies, plus processed data that span the topic areas. The science topics below include links to data sets related to each topic.

**Data Search Tools**

Searching by parameters:

Searching by surface map:

 **Icy Trek (under development)** is a Geographical Information System (GIS) tool to find, visualize and download data in the context of a map of various icy satellites.

 PILOT is a Geographical Information System (GIS) tool to find and download data in the context of a map of Enceladus and Mimas. **Check this out**

Searching by mission events:

 Event tables exist for all observations of the icy satellites. It may be downloaded as a **Single File (CSV)** combining all of the satellites, or on a per-satellite basis in the table above**.. I think I have this and made the above tables from it** – it is linked in the old version on one of the links

 The **Event Calendar** helps search for observations of icy satellites and related events such as ring-plane crossings.

**Reference Tables and Graphics to Help Find and Understand Data Here I have the handoffs but not the Highlights**

**Cassini Sequence List with Icy Satellite Observations Descriptions**

 **Sequence Time, Descriptions, Planning Timelines and Targets**

**S1 2004-135T18:40:00 May 14 2004 2004-171T21:52:00 S01\_Highlights\_SOST.pdf sost000\_PH\_handoff.pdf Phoebe, Rhea**

**S7 2004-351T13:22:00 Dec 16 2004 2005-022T10:38:00 S07\_Highlights\_SOST.pdf sost0BC\_handoff.pdf**

**sost00C\_handoff.pdf Iapetus, Enceladus, Mimas, Rhea, Dione, Tethys**

**S8 2005-022T10:38:00 Jan 22 2005 2005-058T00:36:00 S08\_Highlights\_SOST.pdf sost003\_handoff.pdf Enceladus, Rhea, Dione, Mimas, Tethys, Pandora**

 **Overview Graphic of All Targeted Flybys [PDF]** find this at [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20) with date, closest approach information, and observing instrument

 **Table of all planned icy satellite observations [CSV]** find this at [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20)

 **List of Observed Icy Satellites Flybys Within 300,000km** ("Voyager Class") [CSV] with name of satellite, date, and closest approach distance find this at [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20)

 **Detailed Observation Table of Instrument Observations Within 300,000 km** ("Voyager Class") [CSV] with observation code, date, observing instrument and additional notes from spacecraft planning find this at [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20)

 **List of highest priority observations from the extended mission** [TXT] (not found)

 **Detailed Table of All Icy Satellite intensive Observing Segments [ PDF | TXT] with observation code, date, observing instrument and additional notes from spacecraft planning (txt file not found)**

 **Overview Table of Inner Rock Observations [CSV]** : Aegaeon, Anthe, Atlas, Calypso, Daphnis, Epimetheus, Helene, Hyperion, Janus, Methone, Pallene, Pan, Pandora, Polydeuces, Prometheus, Telesto find this at [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20)

 **Overview Table of Outer Rock Observations [CSV]:** Albiorix, Bebhionn, Bergelmir, Bestla, Erriapus, Fornjot, Greip, Hati, Hyrrokkin, Ijiraq, Jarnsaxa, Kari, Kiviuq, Loge, Mundilfari, Narvi, Paaliaq, Phoebe, S/2004 S12, S/2004 S13, Siarnaq, Skathi, Skoll, Surtur, Suttungr, Tarqeq, Tarvos, Thrymr, Ymir find this at [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20)

**Documentation and Orientation**

 Cassini-Huygens Analysis and Results of the Mission (CHARM) talk series describing discoveries by the science team during the Cassini mission

 **Icy Satellite Observation Data Book**

 **v**

 **List of Satellite Stellar and Solar Occultation observations**; use the table below to understand the two-letter codes **Eclipse time are linked at** [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20) N**eed flyby tables (not found)**

**Name Code RSS bistatic Event Tables**

Dione DI Bistatic Occultations Flyby Table

Event Calendar

Eclipse Times (when Saturn is blocking the sun)

Enceladus EN Bistatic Occultations Flyby Table

Event Calendar

Plume Observations

Eclipse Times

Iapetus IA Bistatic Occultations Flyby Table

Event Calendar

Eclipse Times

Hyperion HY Bistatic Occultations Flyby Table

Event Calendar

Mimas MI Bistatic Occultations Flyby Table

Event Calendar

Eclipse Times

Phoebe PH

Bistatic Occultations Flyby Table

Event Calendar

Rhea RH Bistatic Occultations Flyby Table

Event Calendar

Eclipse Times

Tethys TE Bistatic Occultations Flyby Table

Event Calendar

Eclipse Times

**IAU Coordinate Systems**

The International Astronomical Union (IAU) has several coordinate systems used to describe planetary coordinates, and understanding them is important to help find appropriate data.

**Searching by parameters:**

 OPUS is a search tool for UVIS and VIMS data with a wide variety of search parameters including the target body, distance, and illumination conditions.

**Searching by mission events:**

 Event tables exist for all observations of the icy satellites. It may be downloaded as a **Single File (CSV)** find this at [https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages\_09172018/sci-icy.html#TODO:UVIS-20](https://atmos.nmsu.edu/~itrejo/Cassini-Help-Pages_09172018/sci-icy.html%22%20%5Cl%20%22TODO%3AUVIS-20) combining all of the satellites, or on a per-satellite basis in the sections below.

 The Event Calendar helps search for observations of icy satellites and related events such as ring-plane crossings.

Interiors of Saturn Moons

Moon-Interior Data **Need Flyby Tables**

Name RSS Gravity Event Tables

Dione Gravity Map Flyby Table

Event Calendar

Enceladus Gravity Map Flyby Table

Event Calendar

Iapetus Gravity Map Flyby Table

Event Calendar

Hyperion Gravity Map Flyby Table

Event Calendar

Mimas Gravity Map Flyby Table

Event Calendar

Phoebe Gravity Map Flyby Table

Event Calendar

Rhea Gravity Map Flyby Table

Event Calendar

Tethys Gravity Map Flyby table

Event Calendar

Searching by mission events:

 Event tables exist for all observations of the icy satellites. It may be downloaded as a **Single File (CSV)** combining all of the satellites, or on a per-satellite basis in the sections below.

 The **Event Calendar** helps search for measurements of icy satellites.

**Studying the Magnetospheric Interactions of Icy Satellites**

**Searching by mission events:**

Event tables exist for all fields and particles-instrument observations of the icy satellites. It may be downloaded as a **Single File (CSV)** combining all of the satellites, or on a per-satellite basis in the sections below.

 The **Event Calendar** helps search for observations of icy satellites and related events such as ring-plane crossings.

**Surfaces of Icy Satellites**

**Surface Data and Maps**

**Name CIRS Infrared VIMS Infrared UVIS Ultraviolet ISS Visible RADAR data Event Tables I had some of these**

Dione CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Map Mosaic

ISS Data RADAR Data Flyby Table

Event Calendar

High-phase Dione Observations

Eclipse Times (when Saturn is blocking the sun)

Enceladus CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Map Mosaic

ISS Data RADAR Data Flyby Table

Event Calendar

Eclipse Times

Iapetus CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Map Mosaic

ISS Data RADAR Data Flyby Table

Event Calendar

Eclipse Times

Hyperion CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Data RADAR Data Flyby Table

Event Calendar

Mimas CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Data RADAR Data Flyby Table

Event Calendar

Eclipse Times

Phoebe CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Data RADAR Data Flyby Table

Event Calendar

Rhea CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Map Mosaic

ISS Data RADAR Data Flyby Table

Event Calendar

Eclipse Times

Tethys CIRS Data VIMS Map

VIMS Data UVIS Map

UVIS Data ISS Map Mosaic

ISS Data RADAR Data Flyby Table

Event Calendar

Eclipse Times

Red Tethys Observations

**IAU Coordinate Systems**

**Searching by parameters:**

**Searching by surface map:**

 **Icy Trek (under development)** is a Geographical Information System (GIS) tool to find, visualize and download data in the context of a map of Dione, Enceladus, Iapetus and Rhea.

 PILOT is a Geographical Information System (GIS) tool to find and visualize data in the context of a map of Enceladus and Mimas. **Look at this!!!**

**Searching by mission events:**

 Event tables exist for all observations of the icy satellites. It may be downloaded as a **Single File (CSV)** combining all of the satellites, or on a per-satellite basis in the sections below.

 The **Event Calendar** helps search for observations of icy satellites and related events such as ring-plane crossings.

 **The CIRS Icy Satellite Target Notebook** provides details on the many CIRS observations and observation campaigns of the Icy Satellites pursued during the course of the Cassini mission.

 **Red Tethys Observation table I have got this**