Accessing Diverse Data Sets at the PDS Rings Node

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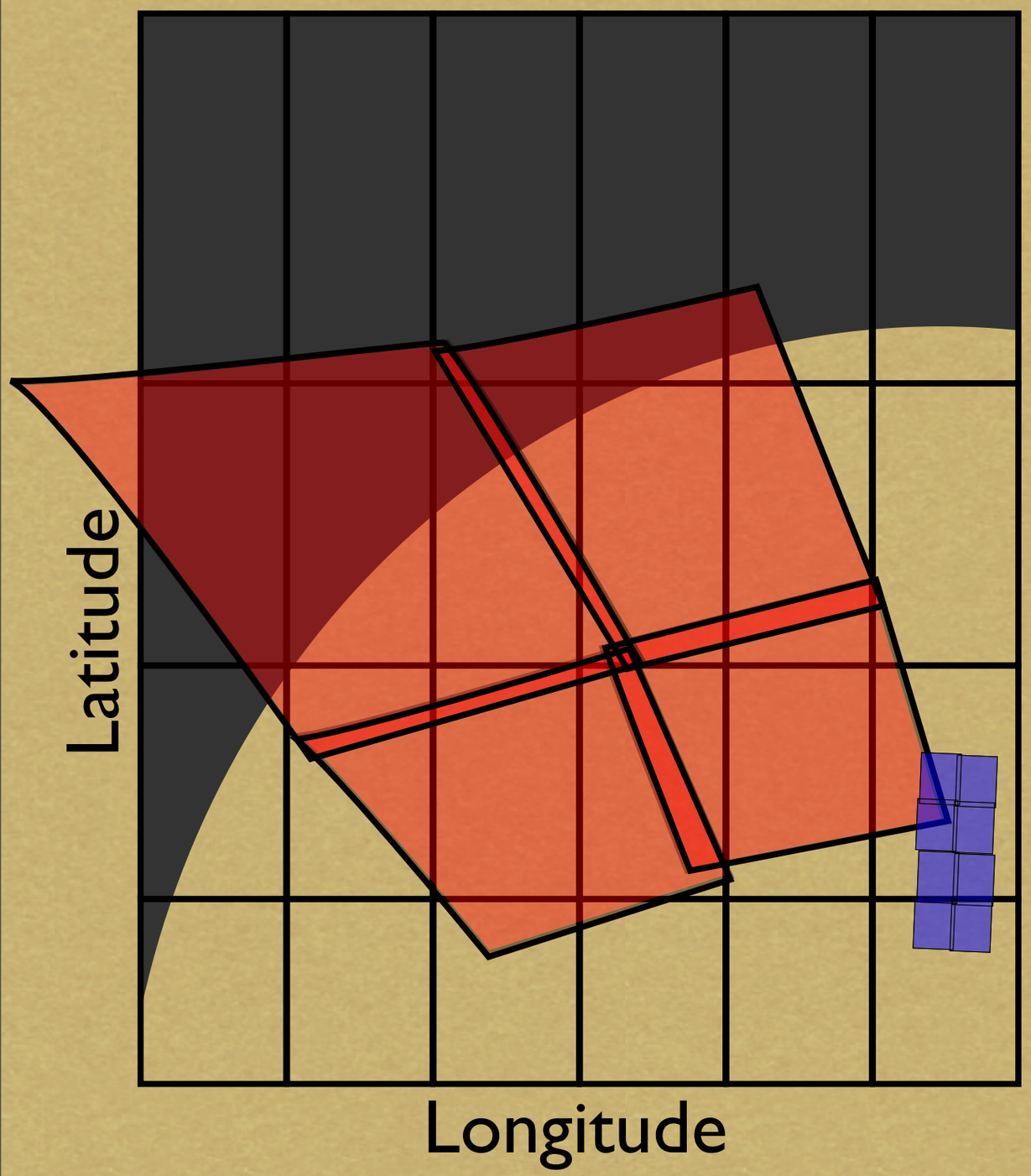
How do we help users find and use the "Needle(s) in the Haystack"?

Three Challenges:

- The "Unmappable Data" Problem.
- The "Lowest Common Denominator" Problem.
- The "Tower of Babel" Problem.
- ...all these are corollaries of the "Google Problem":

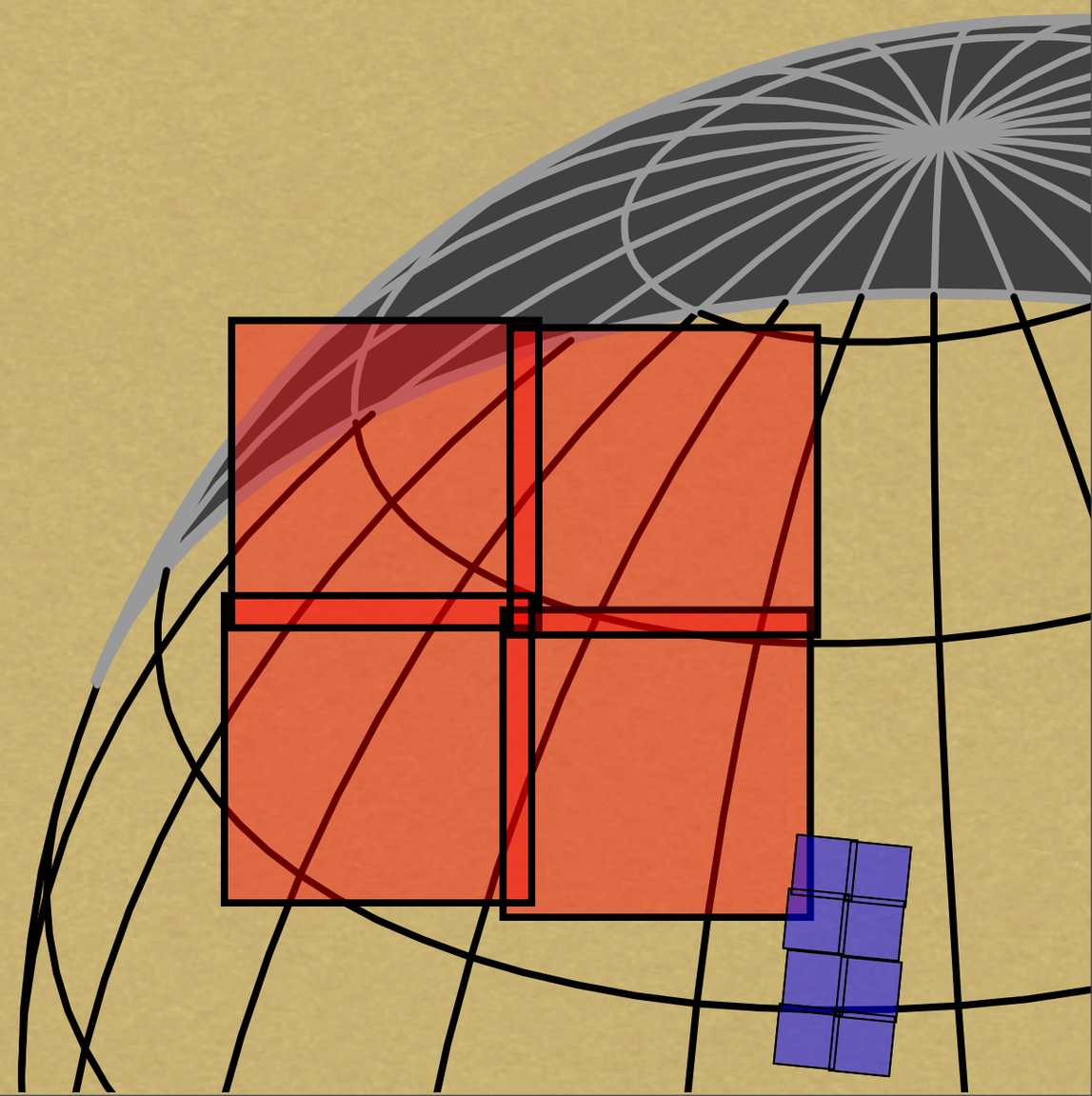
  Users expect web services to analyze their data and write up their results for submission!

Data Mapping



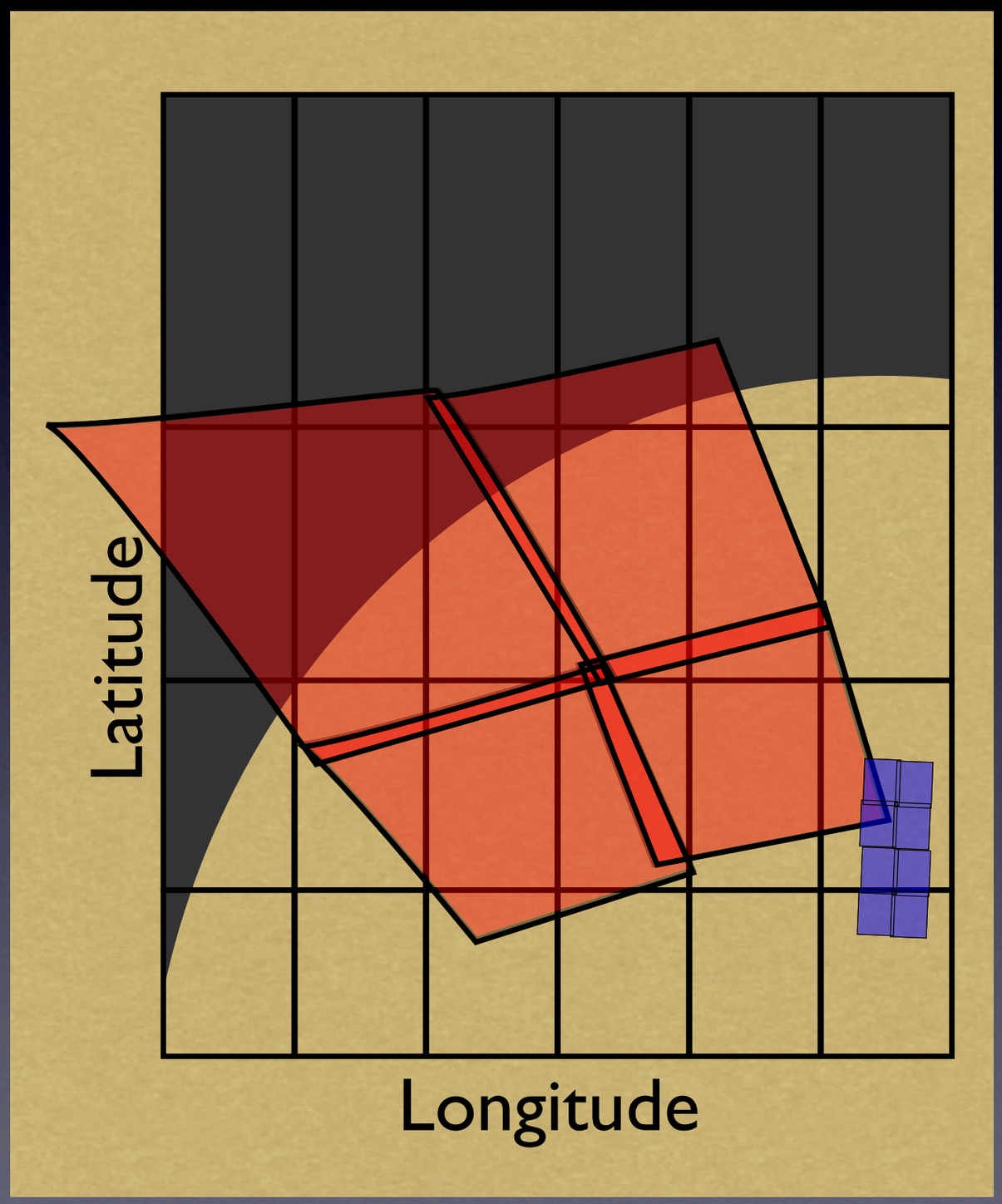
Mapped View

Unmapped View



Mapped View of Data:

Conform the products to the "natural" coordinates

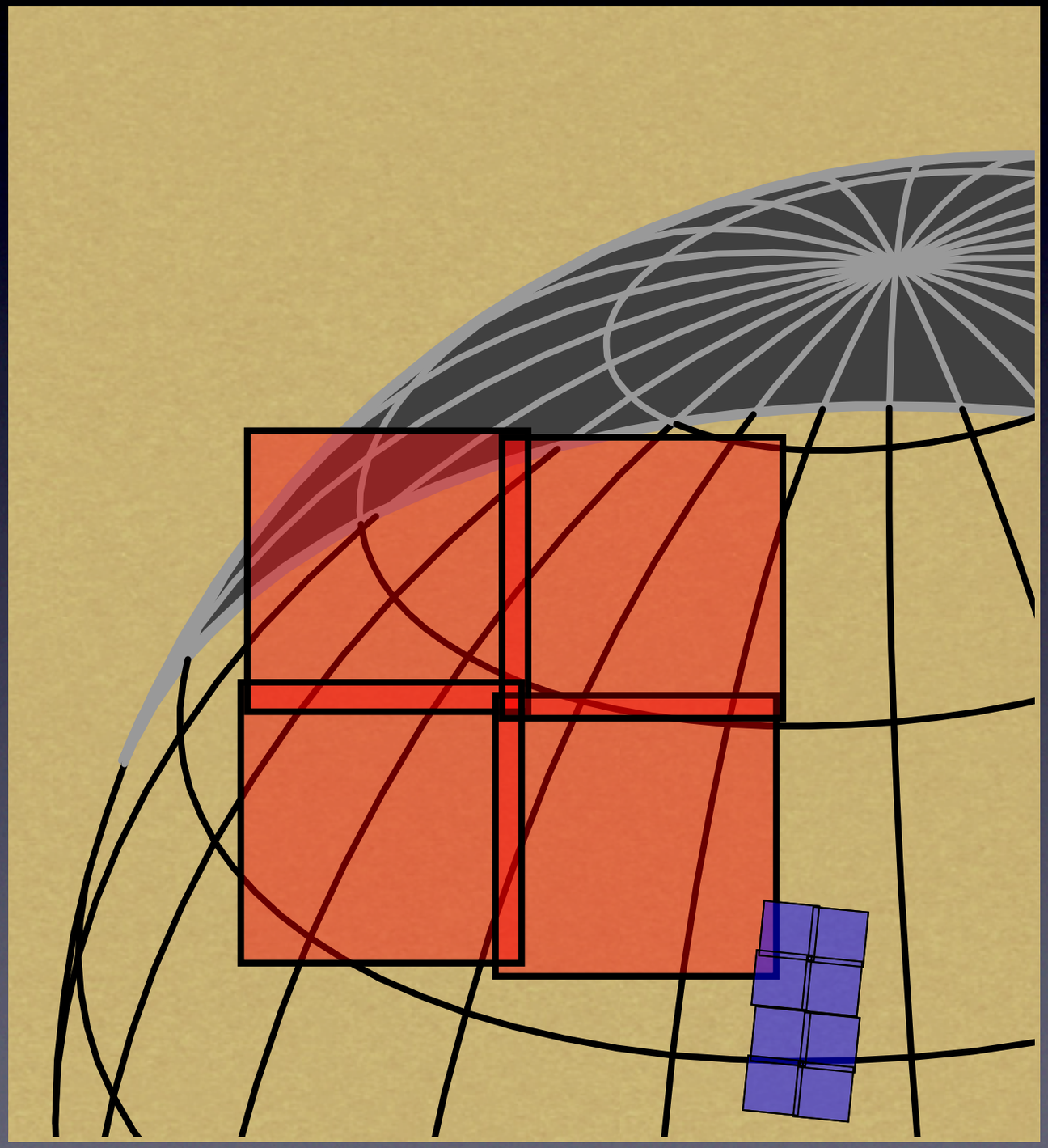


- Vastly simplifies the study of fixed targets.
- Is optimal for small-scale "postage stamp" views.
- Is *required* for heavily-processed and derived data products.
  - Mosaics & maps.
  - Radar & radio data.
- *But*, it can introduce geometric distortion.

Unmapped View of Data:

Let the field of view speak for itself

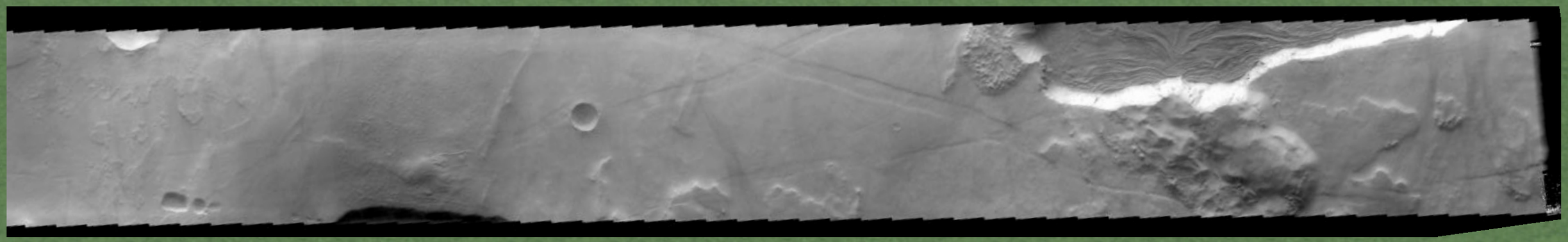
- Allows coordinate contours to "bend."
- Is appropriate for large-scale views of a target.
- Handles variations in lighting & viewing geometry.
- Handles moving targets & time-variations.
- *But*, search procedures get much more complex.



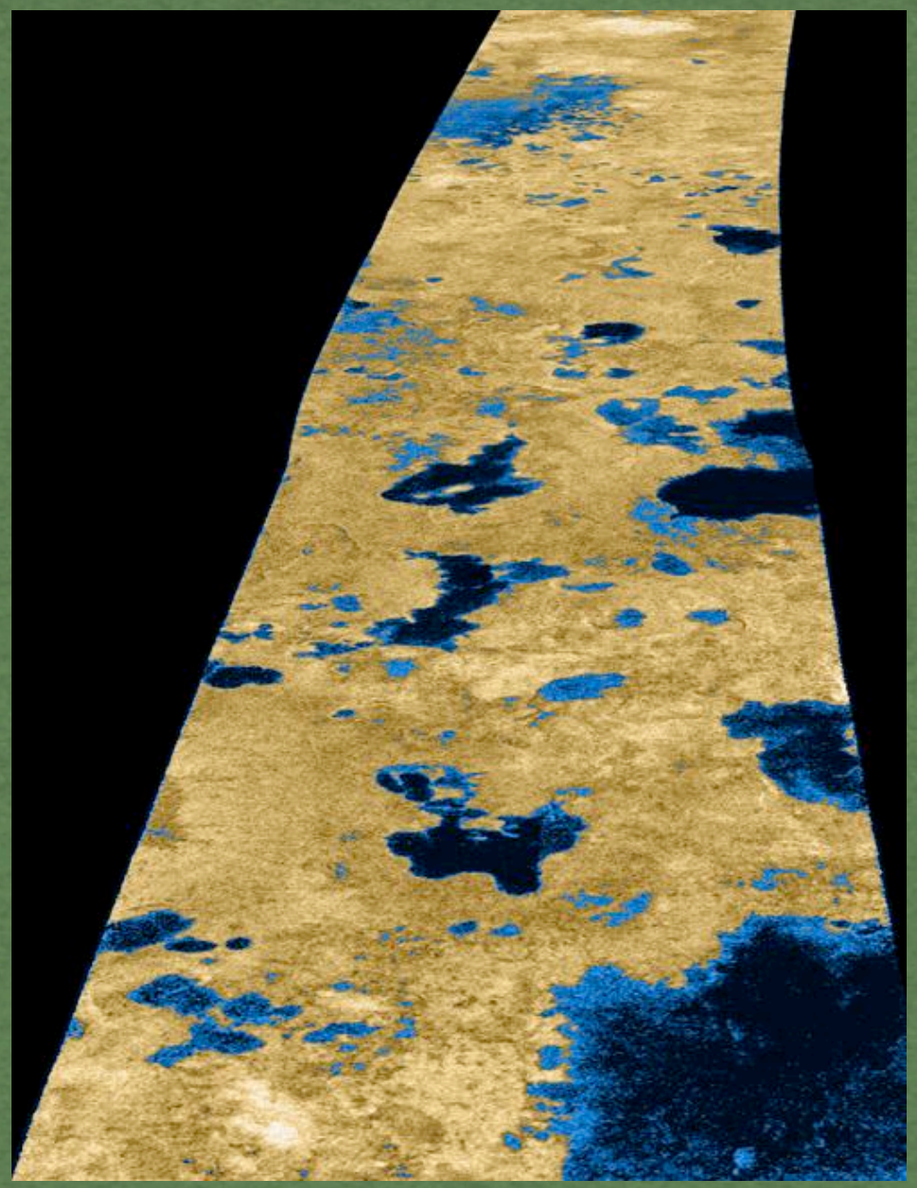
Google Earth™: Find every Starbucks in San Francisco

Perhaps this is the "ultimate" mapped view of a data set!

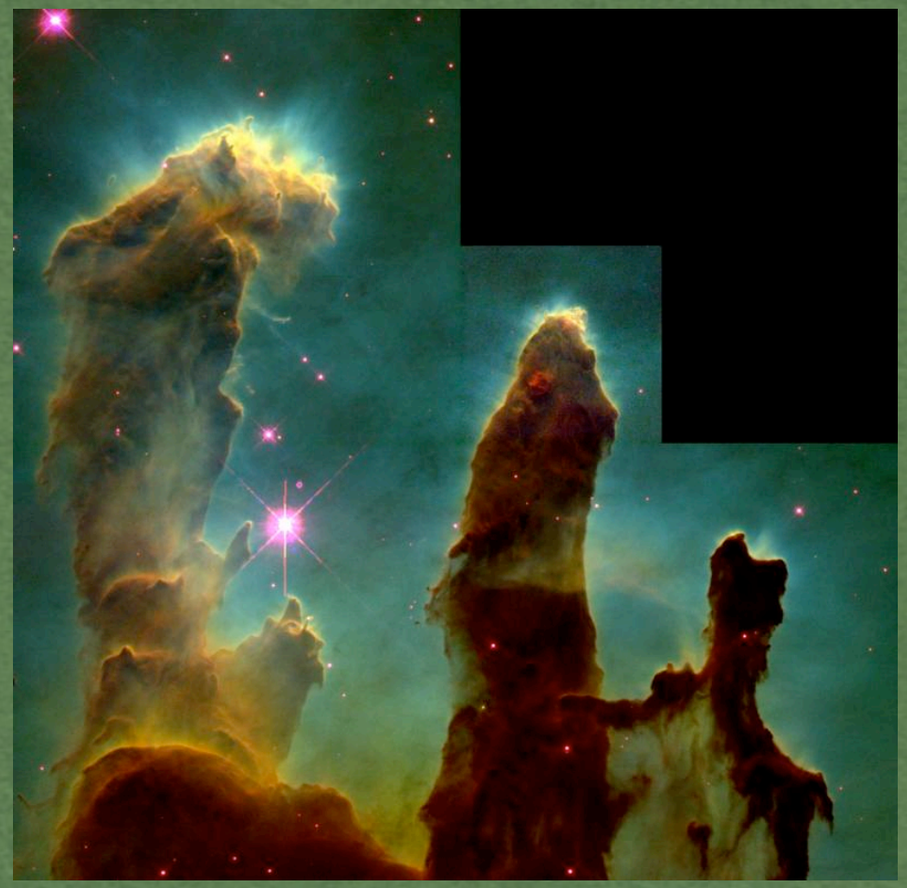
Ideal for mapped viewing/searching...



Mars Odyssey THEMIS Map



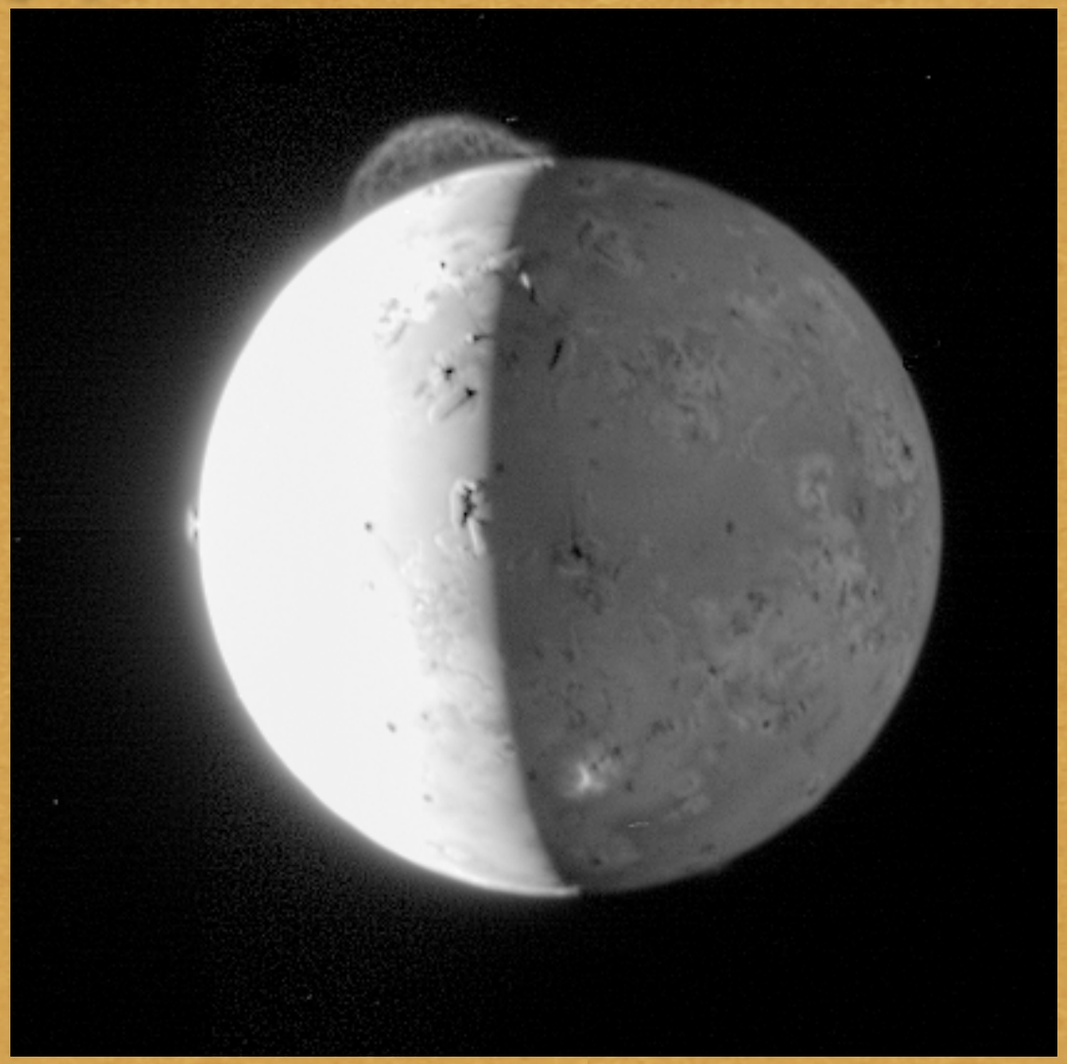
Radar view of "Lakes" on Titan

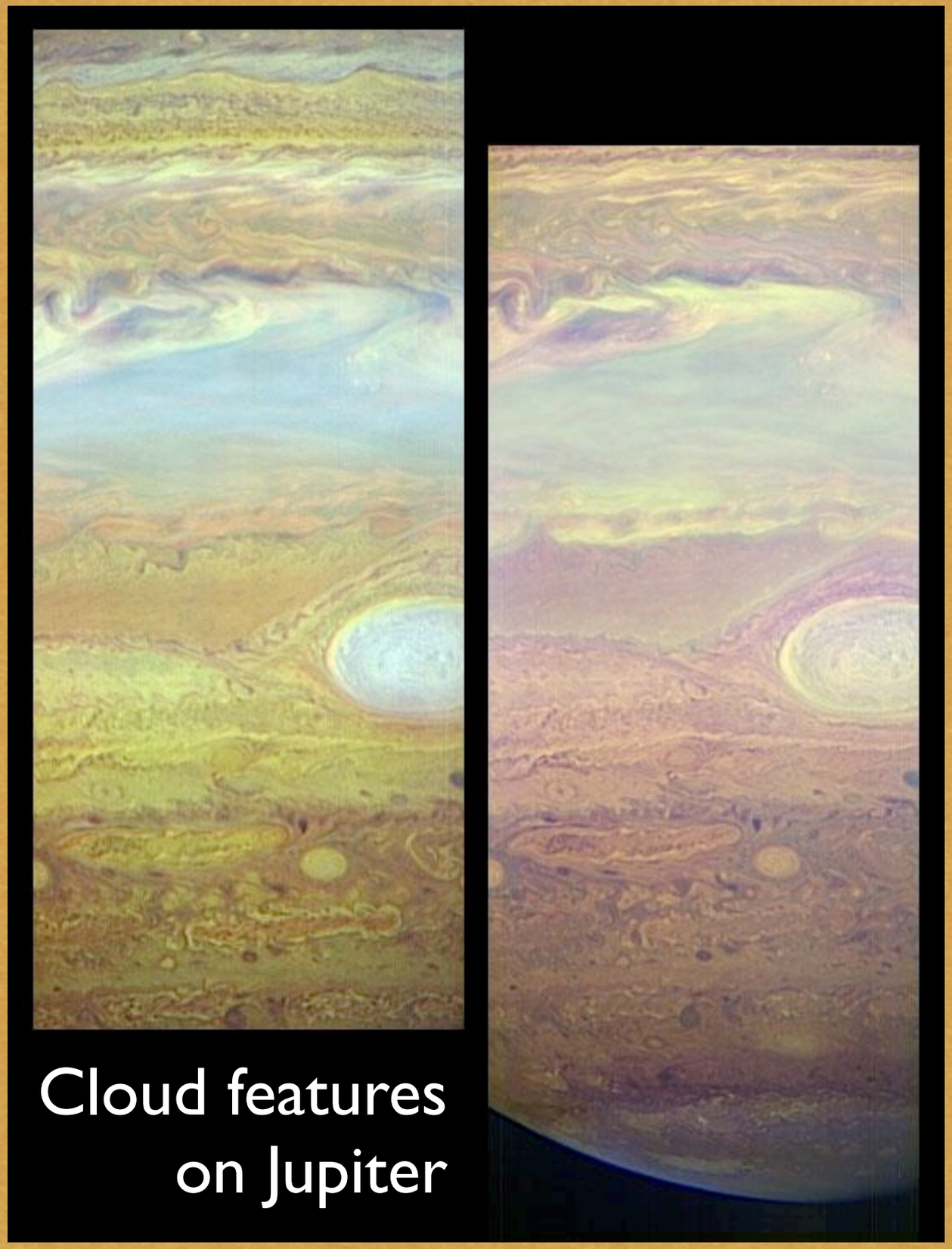


The Eagle Nebula in HST

Marginal for mapped viewing...

Io with plumes,
Jupiter-shine on "dark" face

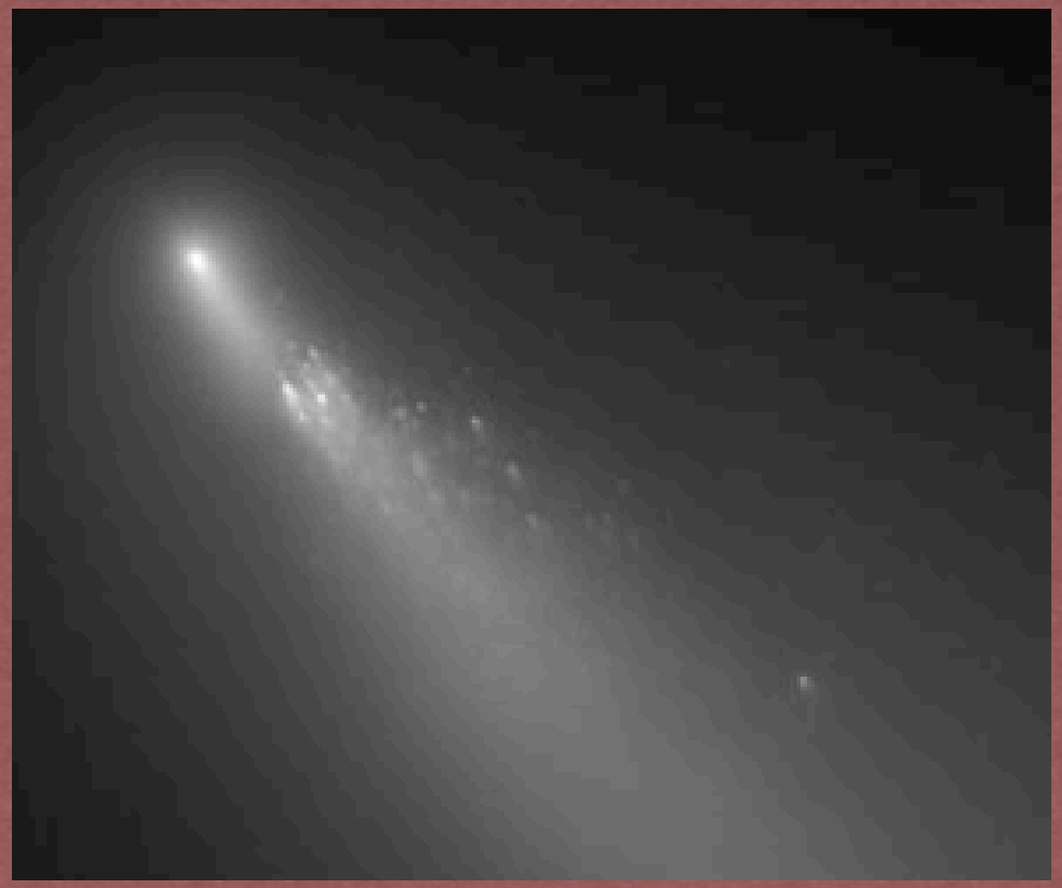




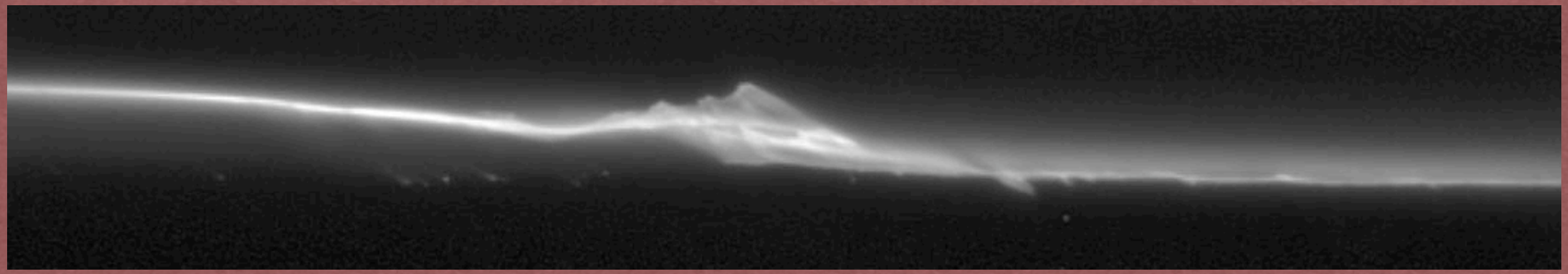
Cloud features
on Jupiter

Unsuitable for mapped viewing...

Breakup of Comet 73P/
Schwassmann-Wachmann 3

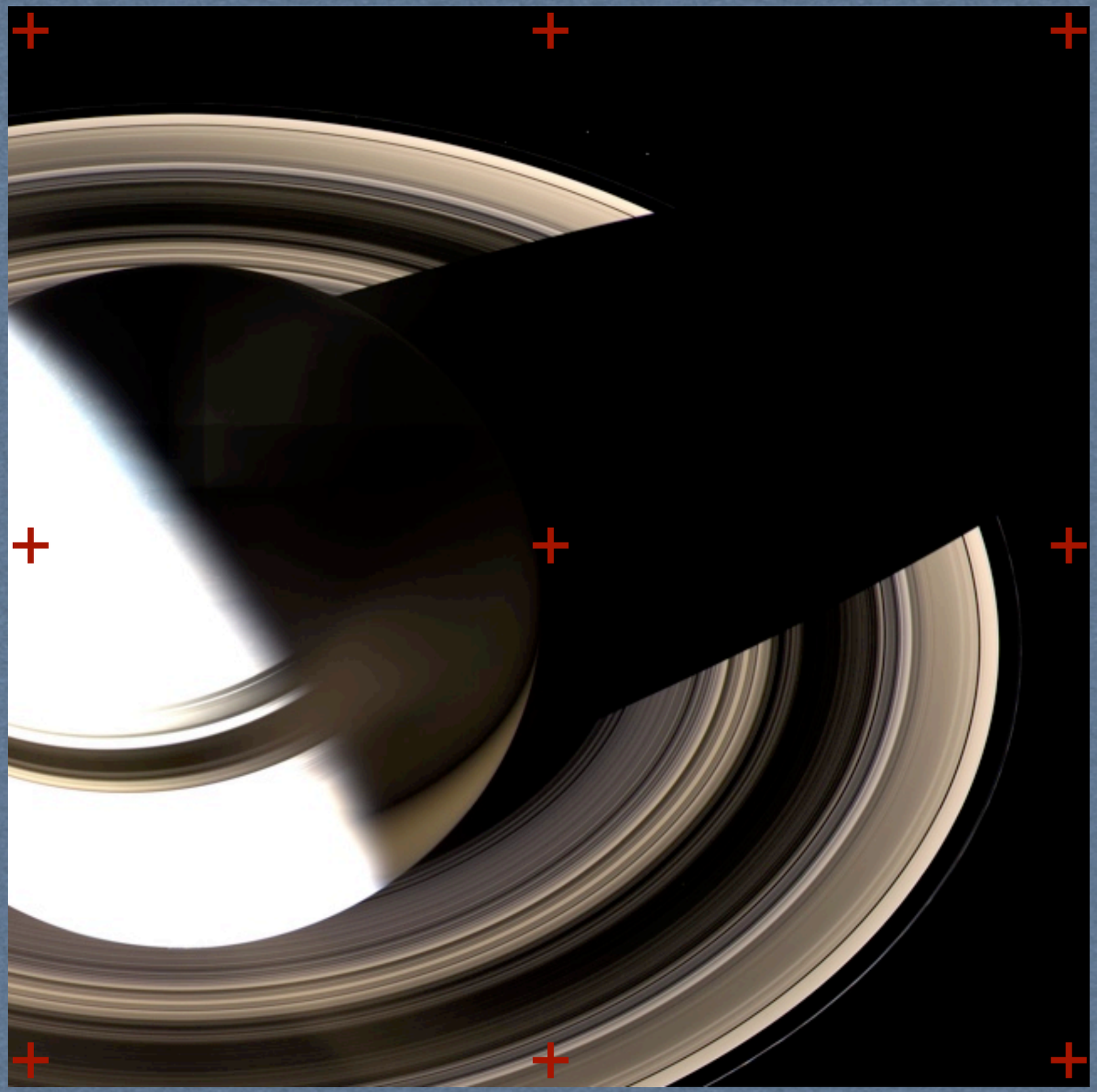


Enceladus with geysers,
casting a shadow into the E ring



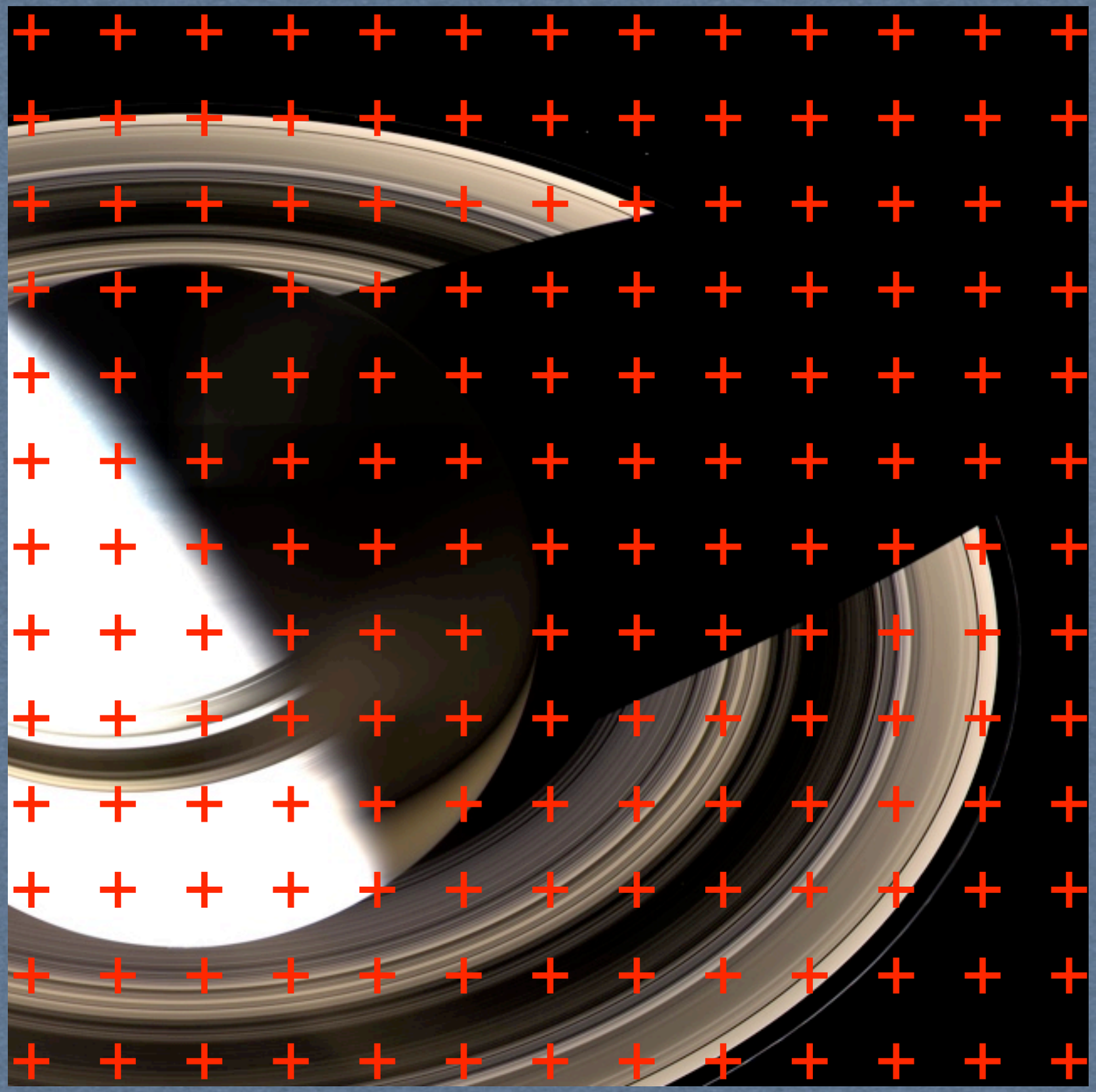
Clump in Saturn's F ring

The “Unmappable Data” Problem



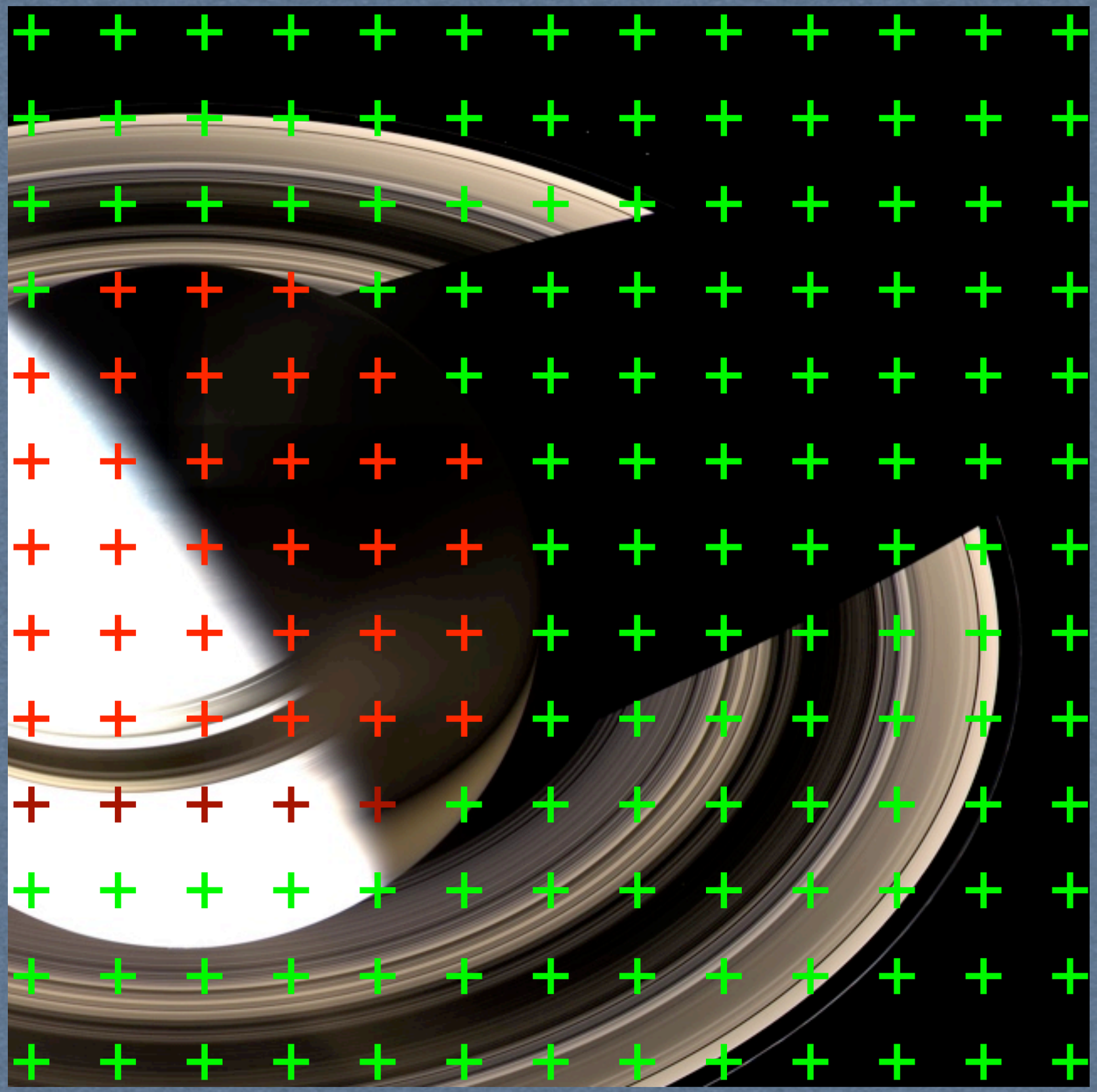
- Center and corner points are not representative of the field of view.

The "Unmappable Data" Problem



- Center and corner points are not representative of the field of view.
- Much finer spatial sampling is required.
- *Revised data model*: metadata describes subsets of products, not entire products.

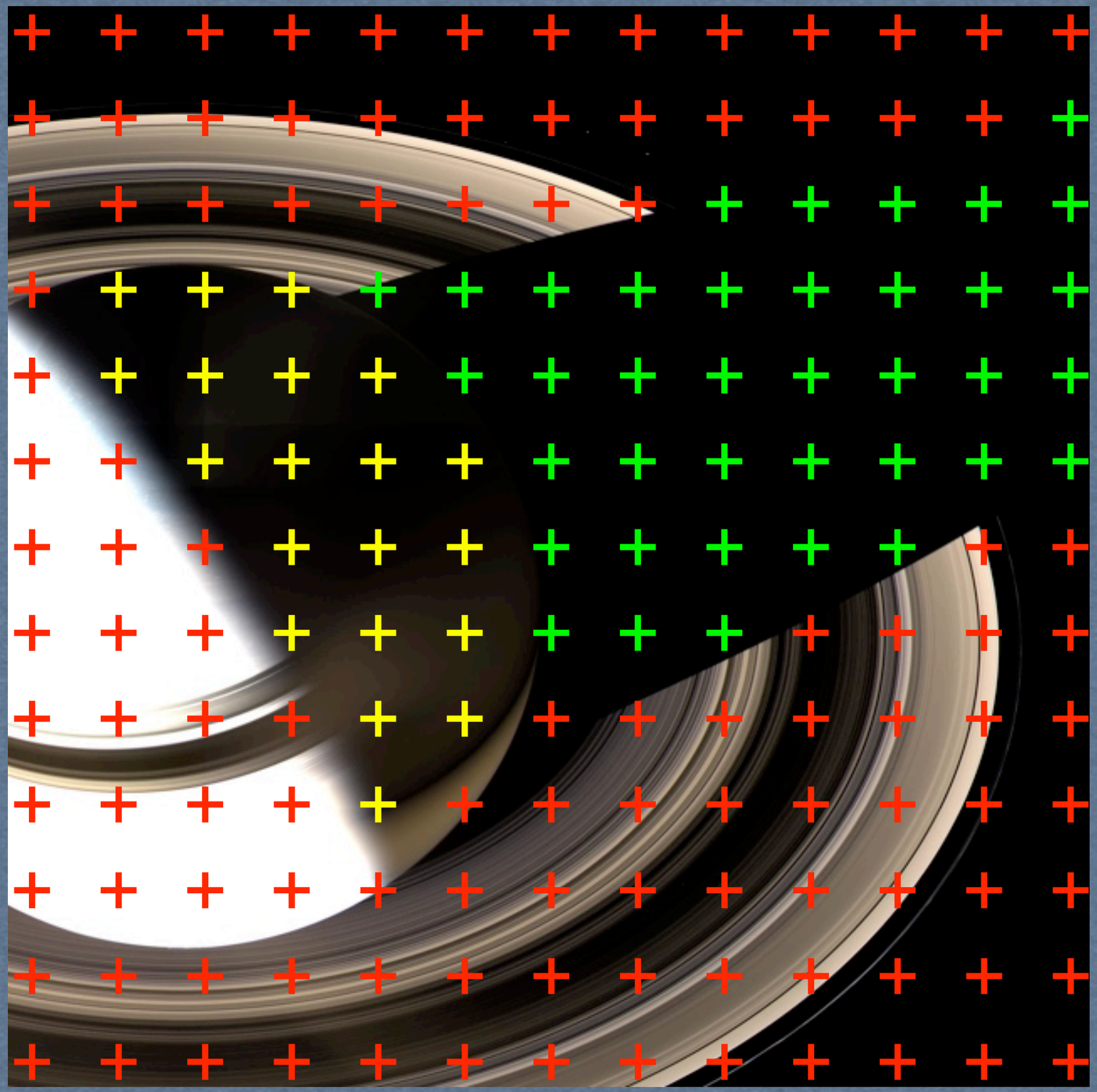
The “Unmappable Data” Problem



Sample Metadata...

- Is ring plane visible?

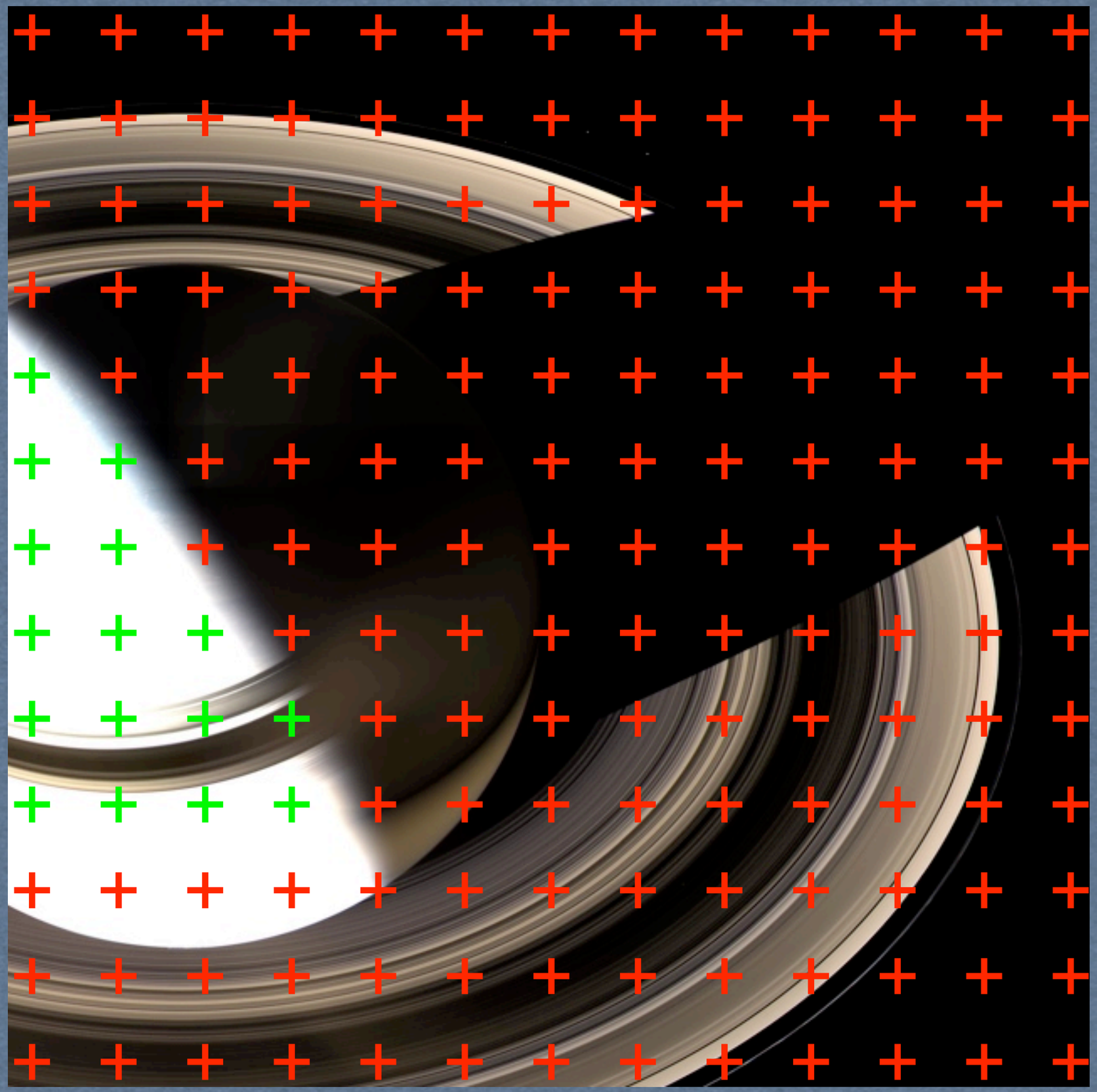
The “Unmappable Data” Problem



Sample Metadata...

- Is ring plane visible?
- Is it shadowed?

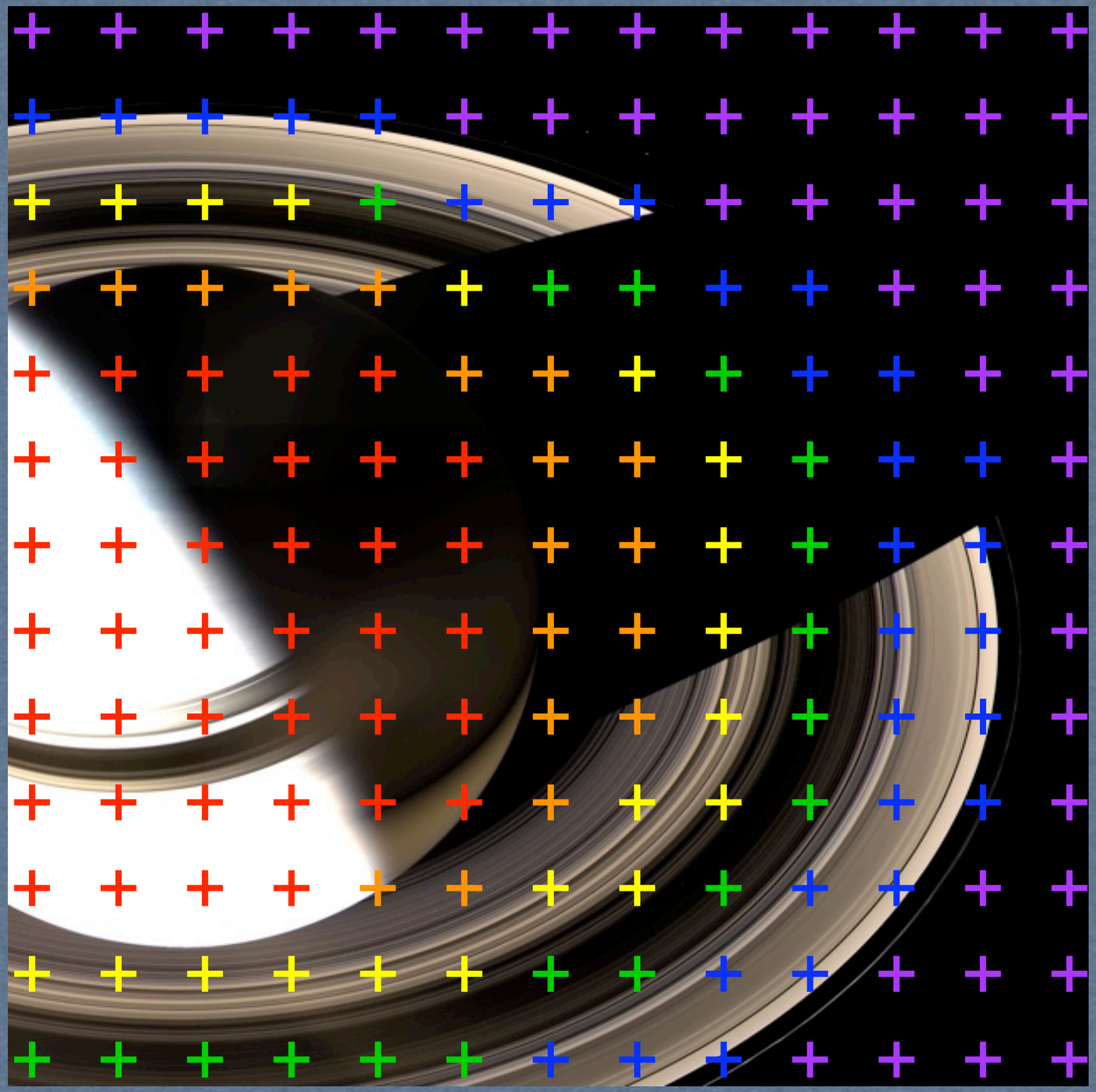
The “Unmappable Data” Problem



Sample Metadata...

- Is ring plane visible?
- Is it shadowed?
- Is it sunlit?

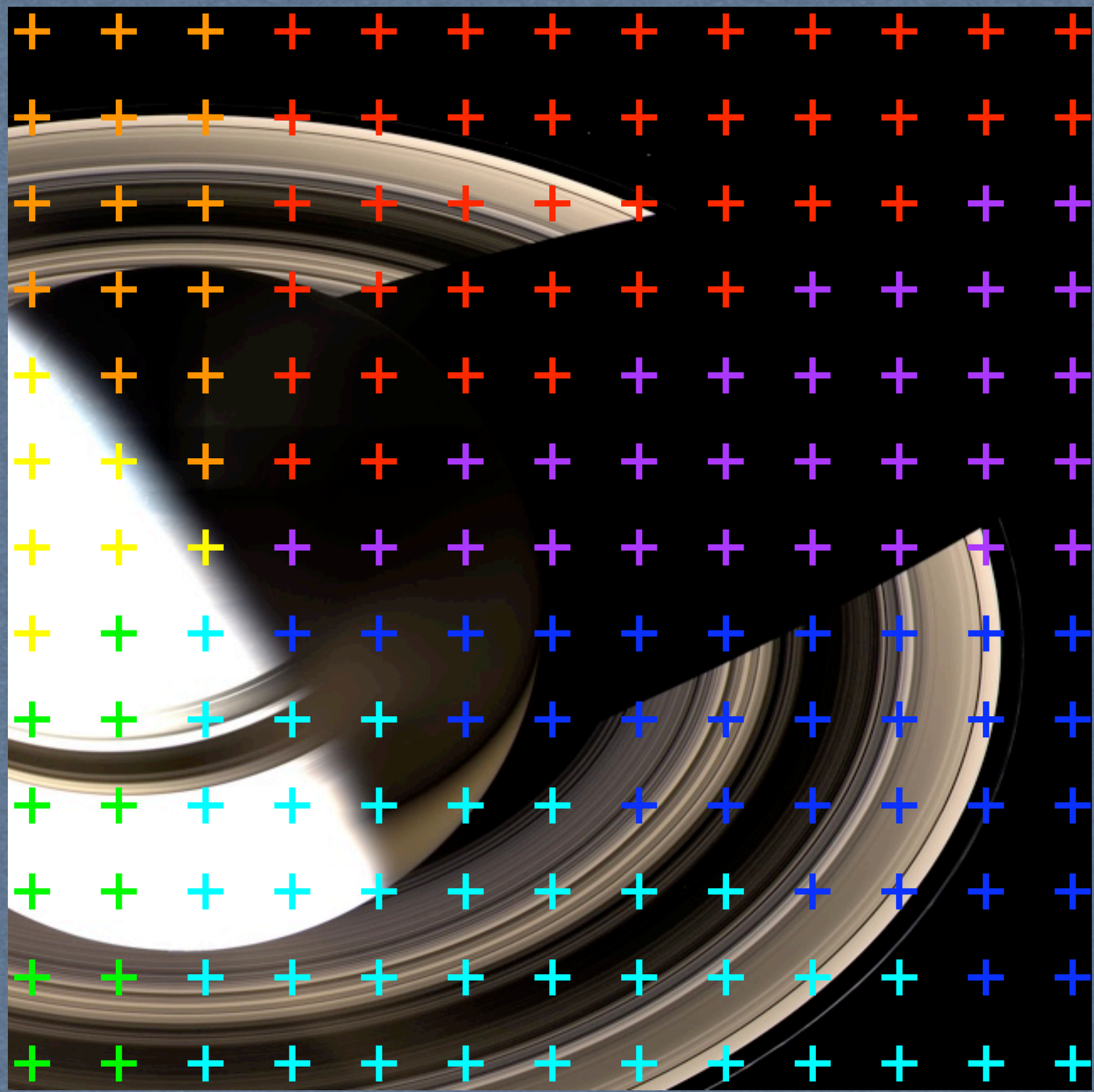
The "Unmappable Data" Problem



Sample Metadata...

- Is ring plane visible?
- Is it shadowed?
- Is it sunlit?
- Orbital radius

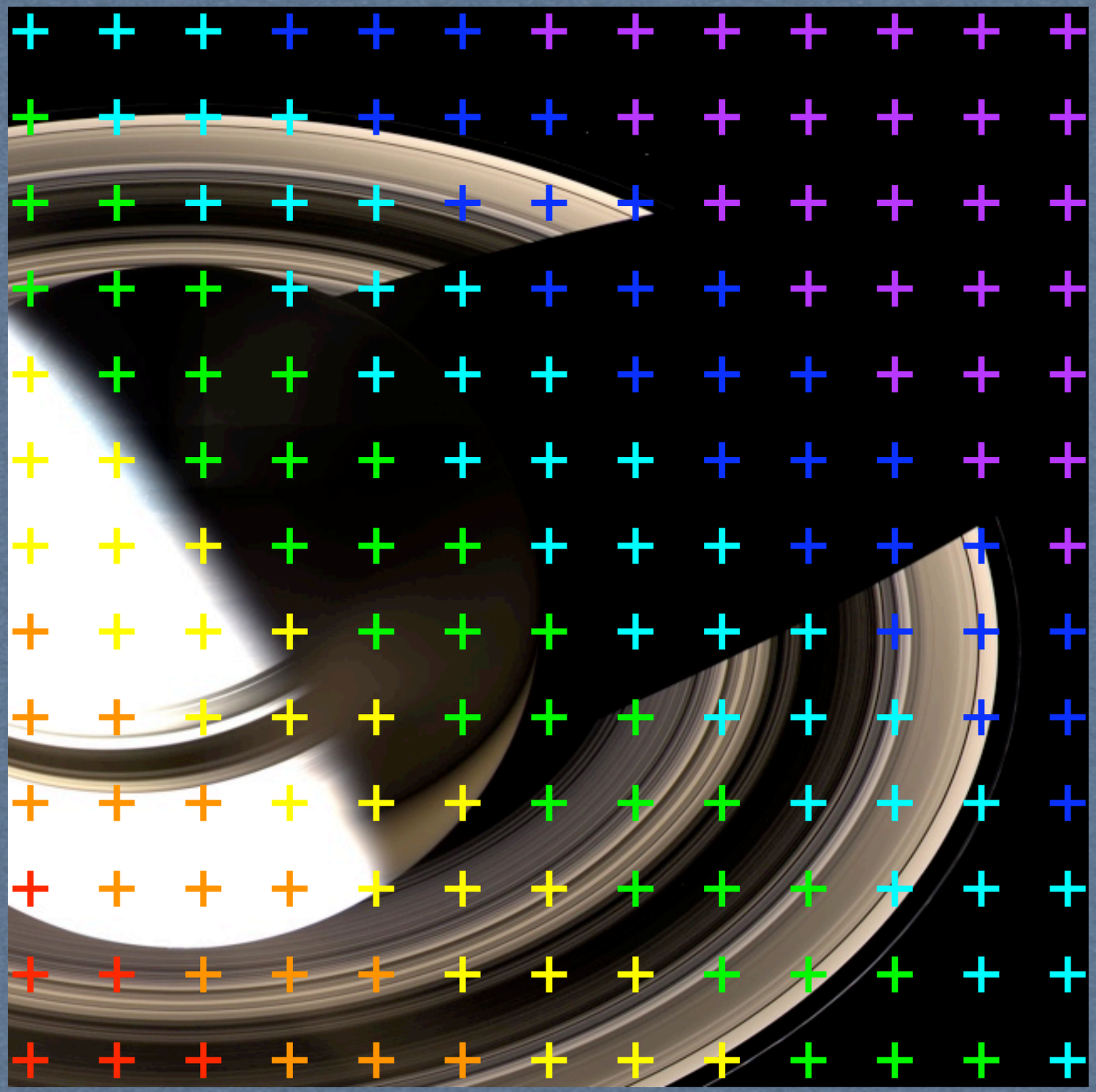
The "Unmappable Data" Problem



Sample Metadata...

- Is ring plane visible?
- Is it shadowed?
- Is it sunlit?
- Orbital radius
- Orbital longitude
  - w.r.t. to Sun
  - w.r.t. observer
  - w.r.t. shadow boundaries
  - J2000 inertial

The “Unmappable Data” Problem



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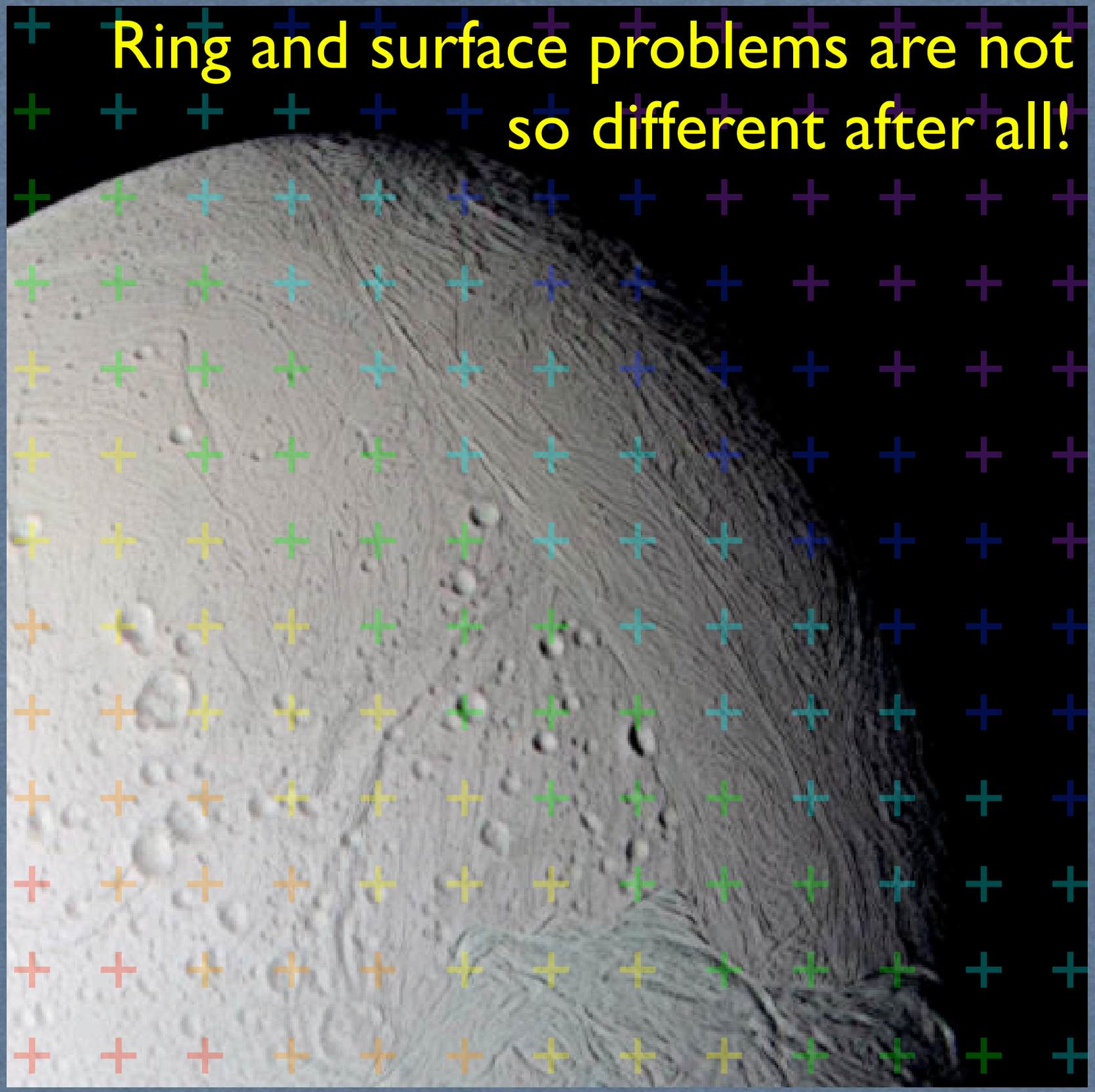
- Phase angle

The "Unmappable Data" Problem



Sample Metadata...

- Is surface visible?
- Is it shadowed?
- Is it sunlit?
- Latitude
- Longitude
  - w.r.t. to Sun
  - w.r.t. observer
  - w.r.t. shadow boundaries
  - J2000 inertial
- Phase angle

The "Lowest Common Denominator" Problem

- Some metadata spans multiple data sets and missions: Time, wavelength, target, etc.
- Some metadata is unique to an individual data set: Filters, instrument modes, etc.
- How can you provide the richest possible set of metadata for searches that cross instrument & mission boundaries?
- Often the search options get reduced to their "lowest common denominator."

Cassini CIRS

Voyager ISS

Cassini VIMS

Voyager UVS
Voyager PPS
Voyager RSS
Cassini UVIS
Cassini RSS

Cassini ISS

Data Model

Cassini CIRS
- Spectra
- Occultations

Voyager ISS
- Derived Products

Cassini VIMS
- Cubes
- Occultations

Voyager UVS
Voyager PPS
Voyager RSS
Cassini UVIS
Cassini RSS

Cassini ISS
- Derived Products

Data Model

Ring Data

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Data Model

Data Model

Ring Data
- Images
- Spectra
- Polarization
- Radial Profiles

Cassini CIRS
- Spectra
- Occultations

Voyager ISS
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Cassini VIMS
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Voyager UVS
Voyager PPS
Voyager RSS
Cassini UVIS
Cassini RSS

Data Model

- Ring Data
  - Images
  - Spectra
  - Polarization
  - Radial Profiles
    - Intensity Profiles
    - Occultations
      - Stellar
      - Radio
- Cassini CIRS
  - Spectra
  - Occultations
- Voyager ISS
  - Derived Products
- Cassini VIMS
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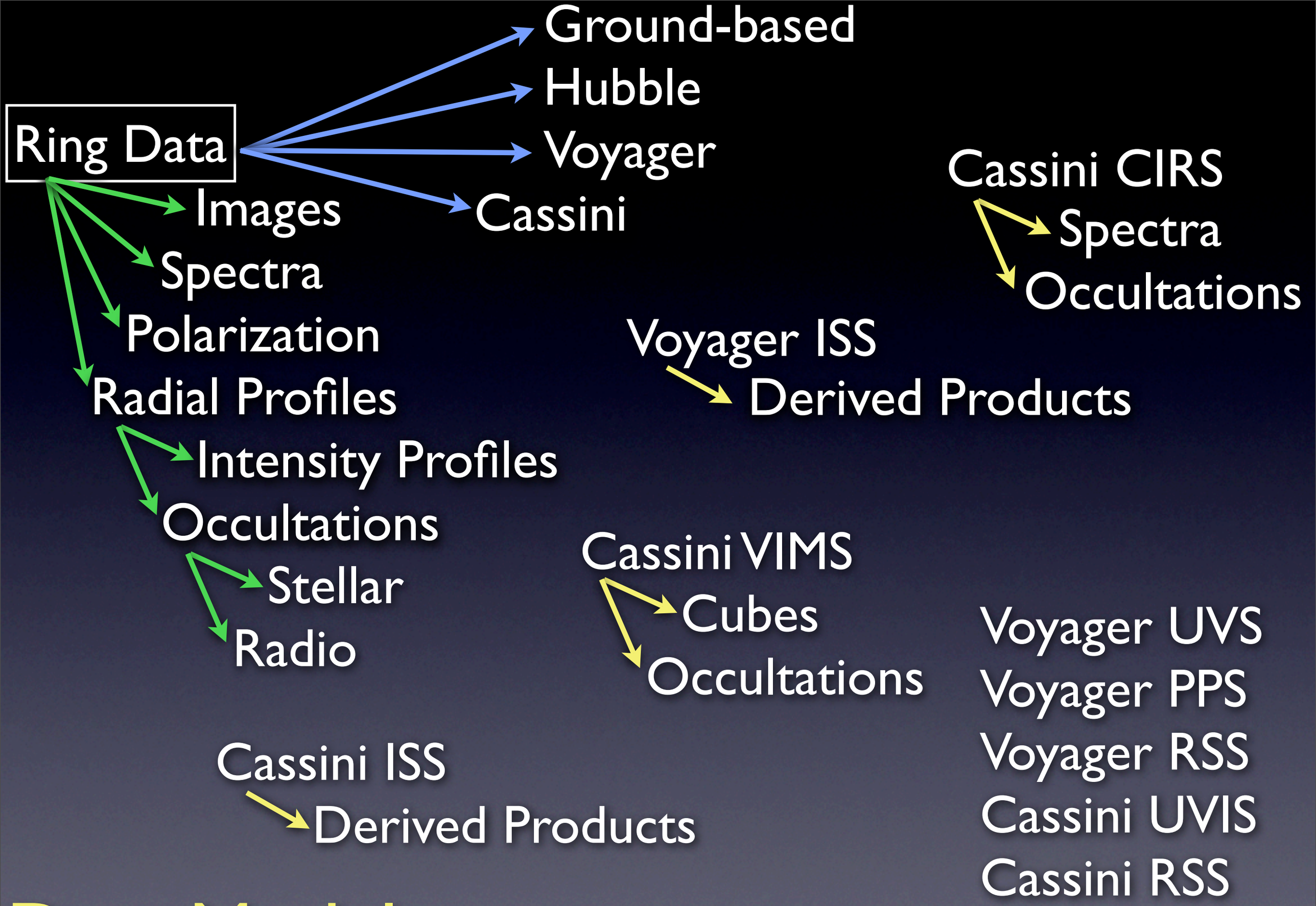
Ring Data
Ground-based
Hubble
Voyager
Cassini
Images
Spectra
Polarization
Radial Profiles
Intensity Profiles
Occultations
Stellar
Radio
Cassini CIRS
Spectra
Occultations
Voyager ISS
Derived Products
Cassini VIMS
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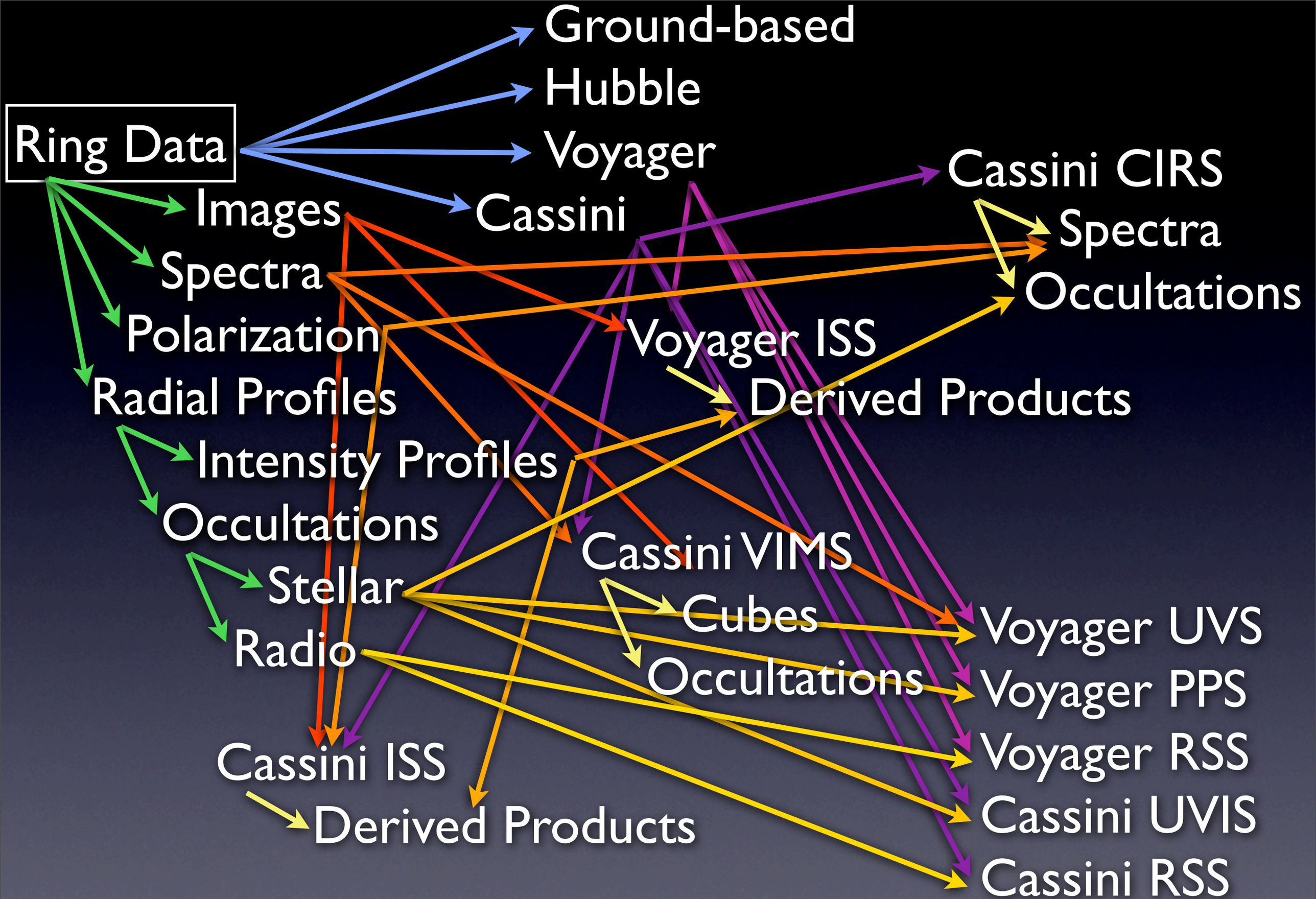
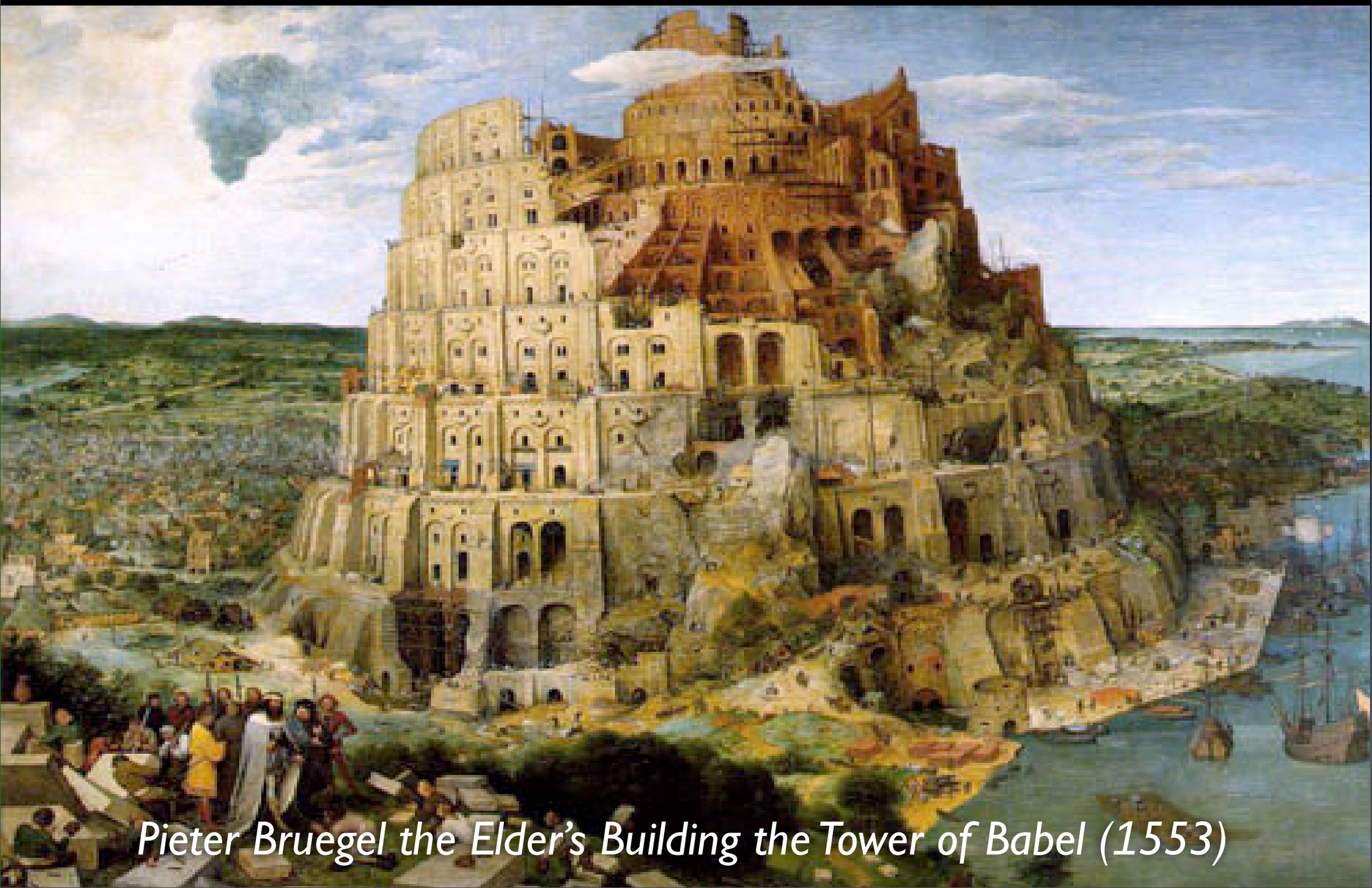
Derived Products

Data Model



Data Model: "Multiple Inheritance"

The "Tower of Babel" Problem



Pieter Bruegel the Elder's Building the Tower of Babel (1553)

The "Tower of Babel" Problem

- We all use different file formats!
  - FITS, VICAR, ISIS, ASCII, HDF, CSV, TIFF, ...
  - Least-significant byte (LSB) vs. Most-significant byte (MSB) first architectures.
  - Text line terminators: CR, LF, CR+LF.
- The tower has fallen and there's no going back. We have to live with multiple formats.
- Users expect the data in "their" format.
- We *all* need <u>effective</u> file translation tools.

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(HELP)

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints

General Constraints

Planet

☐ Jupiter ☐ Saturn ☐ Uranus ☐ Neptune

Nominal Target Class

Nominal Target Name

☐ ATLAS	☐ HIMALIA	☐ PAN	☐ SYSTEM
☐ CALLISTO	☐ HYPERION	☐ PANDORA	☐ TELESTO
☐ CALYPSO	☐ IAPETUS	☐ PHOEBE	☐ TETHYS
☐ DARK	☐ IO	☐ POLYDEUCES	☐ TITAN
☐ DARK SKY	☐ JANUS	☐ PROMETHEUS	☐ UNK
☐ DIONE	☐ JUPITER	☐ RHEA	☐ UNK SAT
☐ ENCELADUS	☐ MASURSKY	☐ S RINGS	☐ VENUS
☐ EPIMETHEUS	☐ METHONE	☐ SATURN	
☐ EUROPA	☐ MIMAS	☐ SKY	
☐ FOMALHAUT	☐ MOON	☐ SPICA	
☐ GANYMEDE	☐ NONE	☐ STAR	
☐ HELENE	☐ PALLENE	☐ SUN	

Mission

Instrument Host Name

Instrument Name

Observation Time

Target Intercept Time

Observation Class

Measurement Quantity

Data Type

Ring Observation ID

Note

Result Count

Please Make a Selection

Rings Node Database Alpha Version.

get results

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Selection Tabs

General Constraints

Planet

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Mission

Instrument Host Name

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Observation Class

Measurement Quantity

Data Type

Ring Observation ID

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General Constraints

Planet

Jupiter Saturn Uranus Neptune

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Please Make a Selection

Click triangles to view or hide options

Selection Tabs

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- General Constraints
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General Constraints

Click dictionary icons for definitions

Planet

Jupiter Saturn Uranus Neptune

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Mission

Instrument Host Name

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Observation Time

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Observation Class

Measurement Quantity

Data Type

Ring Observation ID

Note

Result Count

Selection Tabs

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints

Selection Tabs

General Constraints

Planet

Jupiter Saturn Uranus Neptune

Click checkbox to select Saturn

Nominal Target Class

Nominal Target Name

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CALLISTO	HYPERION	PANDORA	TELESTO
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Measurement Quantity

Data Type

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Planet Saturn x

☐ Jupiter ☑ Saturn ☐ Uranus ☐ Neptune

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Mission

Instrument Host Name

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Measurement Quantity

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Ring Observation ID

Note

Result Count

111,753

Rings Node Database Alpha Version.

get results

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- General Constraints
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- Wavelength Constraints

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

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Mission

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Note

Result Count

111,753

Invalid choices are now disabled

Rings Node Database Alpha Version.

get results

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- General Constraints
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- Wavelength Constraints

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

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Live tally of matches

Rings Node Database Alpha Version.

get results

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- Wavelength Constraints

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

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Nominal Target Name

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DARK	IO	POLYDEUCES	TITAN
DARK SKY	JANUS	PROMETHEUS	UNK
DIONE	JUPITER	RHEA	UNK SAT
ENCELADUS	[illegible]	RINGS	VENUS
EPIMETHEUS	METHONE	SATURN	
EUROPA	MIMAS	SKY	
FOMALHAUT	MOON	SPICA	
GANYMEDE	NONE	STAR	
HELENE	PALLENE	SUN	

Select Enceladus

Mission

Instrument Host Name

Instrument Name

Observation Time

Target Intercept Time

Observation Class

Measurement Quantity

Data Type

Ring Observation ID

Note

Result Count

111,753

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- ☑ **General Constraints**
- Ring Geometry Constraints
- Wavelength Constraints

General Constraints

Planet **Saturn** x

☐ Jupiter ☑ Saturn ☐ Uranus ☐ Neptune

Nominal Target Class

Nominal Target Name **ENCELADUS** x

☐ ATLAS	☐ HIMALIA	☐ PAN	☐ SYSTEM
☐ CALLISTO	☐ HYPERION	☐ PANDORA	☐ TELESTO
☐ CALYPSO	☐ IAPETUS	☐ PHOEBE	☐ TETHYS
☐ DARK	☐ IO	☐ POLYDEUCES	☐ TITAN
☐ DARK SKY	☐ JANUS	☐ PROMETHEUS	☐ UNK
☐ DIONE	☐ JUPITER	☐ RHEA	☐ UNK SAT
☑ ENCELADUS	☐ MASURSKY	☐ S RINGS	☐ VENUS
☐ EPIMETHEUS	☐ METHONE	☐ SATURN	
☐ EUROPA	☐ MIMAS	☐ SKY	
☐ FOMALHAUT	☐ MOON	☐ SPICA	
☐ GANYMEDE	☐ NONE	☐ STAR	
☐ HELENE	☐ PALLENE	☐ SUN	

Mission

Instrument Host Name

Instrument Name

Observation Time

Target Intercept Time

Observation Class

Measurement Quantity

Data Type

Ring Observation ID

Note

Result Count

1,478

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

Nominal Target Class

Nominal Target Name ENCELADUS x

ATLAS	HIMALIA	PAN	SYSTEM
CALLISTO	HYPERION	PANDORA	TELESTO
CALYPSO	IAPETUS	PHOEBE	TETHYS
DARK	IO	POLYDEUCES	TITAN
DARK SKY	JANUS	PROMETHEUS	UNK
DIONE	JUPITER	RHEA	UNK SAT
☑ ENCELADUS	MASURSKY	S RINGS	VENUS
EPIMETHEUS	METHONE	SATURN	
EUROPA	MIMAS	SKY	
FOMALHAUT	MOON	SPICA	
GANYMEDE	NONE	STAR	
HELENE	PALLENE	SUN	

Mission
Instrument Host Name
Instrument Name
Observation Time
Target Intercept Time
Observation Class
Measurement Quantity
Data Type
Ring Observation ID
Note

Result Count

1,478

Live tally drops to 1,478

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

Nominal Target Class

Nominal Target Name ENCELADUS x

ATLAS	HIMALIA	PAN	SYSTEM
CALLISTO	HYPERION	PANDORA	TELESTO
CALYPSO	IAPETUS	PHOEBE	TETHYS
DARK	IO	POLYDEUCES	TITAN
DARK SKY	JANUS	PROMETHEUS	UNK
DIONE	JUPITER	RHEA	UNK SAT
☑ ENCELADUS	MASURSKY	S RINGS	VENUS
EPIMETHEUS	METHONE	SATURN	
EUROPA	MIMAS	SKY	
FOMALHAUT	MOON	SPICA	
GANYMEDE	NONE	STAR	
HELENE	PALLENE	SUN	

Mission

Instrument Host Name

Instrument Name

Observation Time

Target Intercept Time

Observation Class

Measurement Quantity

Data Type

Ring Observation ID

Note

Result Count

1,478

Live tally drops to 1,478

Open Mission and Instrument Name

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- Voyager ISS Constraints

General Constraints

Planet Saturn x

- [ ] Jupiter
- [x] Saturn
- [ ] Uranus
- [ ] Neptune

Nominal Target Class

Nominal Target Name ENCELADUS x

[ ] ATLAS	[ ] HIMALIA	[ ] PAN	[ ] SYSTEM
[ ] CALLISTO	[ ] HYPERION	[ ] PANDORA	[ ] TELESTO
[ ] CALYPSO	[ ] IAPETUS	[ ] PHOEBE	[ ] TETHYS
[ ] DARK	[ ] IO	[ ] POLYDEUCES	[ ] TITAN
[ ] DARK SKY	[ ] JANUS	[ ] PROMETHEUS	[ ] UNK
[ ] DIONE	[ ] JUPITER	[ ] RHEA	[ ] UNK SAT
[x] ENCELADUS	[ ] MASURSKY	[ ] S RINGS	[ ] VENUS
[ ] EPIMETHEUS	[ ] METHONE	[ ] SATURN	
[ ] EUROPA	[ ] MIMAS	[ ] SKY	
[ ] FOMALHAUT	[ ] MOON	[ ] SPICA	
[ ] GANYMEDE	[ ] NONE	[ ] STAR	
[ ] HELENE	[ ] PALLENE	[ ] SUN	

Mission Voyager x

- [ ] Cassini
- [x] Voyager
- [ ] Earth Based
- [ ] Galileo
- [ ] Hubble
- [ ] Pioneer

Instrument Host Name

- [ ] Cassini Orbiter
- [ ] Voyager 1
- [ ] Voyager 2
- [ ] Galileo
- [ ] Hubble Space Telescope

Result Count

87

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- Voyager ISS Constraints

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

Nominal Target Class

Nominal Target Name ENCELADUS x

ATLAS	HIMALIA	PAN	SYSTEM
CALLISTO	HYPERION	PANDORA	TELESTO
CALYPSO	IAPETUS	PHOEBE	TETHYS
DARK	IO	POLYDEUCES	TITAN
DARK SKY	JANUS	PROMETHEUS	UNK
DIONE	JUPITER	RHEA	UNK SAT
☑ ENCELADUS	MASURSKY	S RINGS	VENUS
EPIMETHEUS	METHONE	SATURN	
EUROPA	MIMAS	SKY	
FOMALHAUT	MOON	SPICA	
GANYMEDE	NONE	STAR	
HELENE	PALLENE	SUN	

Mission Voyager x

Cassini ☑ Voyager Pioneer

Select Voyager

Instrument Host Name

Cassini Orbiter Voyager 1 Voyager 2 Galileo

Hubble Space Telescope

Result Count

87

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- Voyager ISS Constraints

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

Nominal Target Class

Nominal Target Name ENCELADUS x

ATLAS	HIMALIA	PAN	SYSTEM
CALLISTO	HYPERION	PANDORA	TELESTO
CALYPSO	IAPETUS	PHOEBE	TETHYS
DARK	IO	POLYDEUCES	TITAN
DARK SKY	JANUS	PROMETHEUS	UNK
DIONE	JUPITER	RHEA	UNK SAT
☑ ENCELADUS	MASURSKY	S RINGS	VENUS
EPIMETHEUS	METHONE	SATURN	
EUROPA	MIMAS	SKY	
FOMALHAUT	MOON	SPICA	
GANYMEDE	NONE	STAR	
HELENE	PALLENE	SUN	

Mission Voyager x

Cassini ☑ Voyager Pioneer

Select Voyager

Instrument Host Name

Cassini Orbiter Voyager 1 Voyager 2 Galileo

Hubble Space Telescope

Result Count

87

Tally drops to 87!

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- Voyager ISS Constraints

New tabs appear!

General Constraints

Planet Saturn x

Jupiter ☑ Saturn Uranus Neptune

Nominal Target Class

Nominal Target Name ENCELADUS x

ATLAS	HIMALIA	PAN	SYSTEM
CALLISTO	HYPERION	PANDORA	TELESTO
CALYPSO	IAPETUS	PHOEBE	TETHYS
DARK	IO	POLYDEUCES	TITAN
DARK SKY	JANUS	PROMETHEUS	UNK
DIONE	JUPITER	RHEA	UNK SAT
☑ ENCELADUS	MASURSKY	S RINGS	VENUS
EPIMETHEUS	METHONE	SATURN	
EUROPA	MIMAS	SKY	
FOMALHAUT	MOON	SPICA	
GANYMEDE	NONE	STAR	
HELENE	PALLENE	SUN	

Mission Voyager x

Cassini ☑ Voyager Pioneer

Select Voyager

Instrument Host Name

Cassini Orbiter Voyager 1 Voyager 2 Galileo

Hubble Space Telescope

Result Count
87

Tally drops to 87!

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- **Image Constraints**
- Voyager Mission Constraints
- Voyager ISS Constraints

Image Constraints

Exposure Duration

min: max: second

add range
get endpoints

Image Duration

min: max:

add range
get endpoints

Image Type

Frame Pushbroom Raster

Greater Size in Pixels

min: max:

add range
get endpoints

Lesser Size in Pixels

min: max:

add range
get endpoints

Intensity Levels

min: max:

add range
get endpoints

Numeric ID

min: max:

add range
get endpoints

Result Count

87

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- **Voyager Mission Constraints**
- Voyager ISS Constraints

Voyager Mission Constraints

Spacecraft Clock Count

min: max: add range get endpoints

Earth Received Time

min: max: add range get endpoints

Result Count

87

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- **Voyager ISS Constraints**

Voyager ISS Constraints

Image ID

min: max: add range get endpoints

Camera **Narrow Angle Camera** x

☑ Narrow Angle Camera ☐ Wide Angle Camera

Filter Name

☐ BLUE ☐ CH4_U ☐ GREEN ☐ ORANGE ☐ VIOLET
☐ CH4_JS ☐ CLEAR ☐ NAD ☐ UV

Filter Number

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Shutter Mode

☐ BODARK ☐ BOTALT ☐ BOTSIM ☐ BSIMAN ☐ NAONLY ☐ WAONLY

Scan Rate

☐ 1:1 ☐ 3:1 ☐ 5:1

Edit Mode

☐ 1:1 ☐ 1:2 ☐ 1:3 ☐ 2:3 ☐ 3:5

Result Count

79

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- **Voyager ISS Constraints**

Voyager ISS Constraints

Image ID

min: max: add range get endpoints

Camera Narrow Angle Camera x

Narrow Angle Camera Wide Angle Camera

Select narrow angle camera

Filter Name

BLUE CH4_U GREEN ORANGE VIOLET
CH4_JS CLEAR NAD UV

Filter Number

0 1 2 3 4 5 6 7

Shutter Mode

BODARK BOTALT BOTSIM BSIMAN NAONLY WAONLY

Scan Rate

1:1 3:1 5:1

Edit Mode

1:1 1:2 1:3 2:3 3:5

Result Count

79

Rings Node Database Alpha Version.

get results

Start Over + create permanent link

- [x] General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- [x] **Voyager ISS Constraints**

Voyager ISS Constraints

Image ID

min: max: add range get endpoints

Camera Narrow Angle Camera x

- [x] Narrow Angle Camera
- [ ] Wide Angle Camera

Filter Name

BLUE CH4_U GREEN ORANGE VIOLET
CH4_JS CLEAR NAD UV

Filter Number

0 1 2 3 4 5 6 7

Shutter Mode

BODARK BOTALT BOTSIM BSIMAN NAONLY WAONLY

Scan Rate

1:1 3:1 5:1

Edit Mode

1:1 1:2 1:3 2:3 3:5

Result Count

79

Select narrow angle camera

Tally drops to 79!

Rings Node Database Alpha Version.

Click to get results

get results

Start Over + create permanent link

- [x] General Constraints
- Ring Geometry Constraints
- Wavelength Constraints
- Image Constraints
- Voyager Mission Constraints
- [x] **Voyager ISS Constraints**

Voyager ISS Constraints

Image ID

min: max: add range get endpoints

Camera Narrow Angle Camera x

- [x] Narrow Angle Camera
- [ ] Wide Angle Camera

Filter Name

- [ ] BLUE
- [ ] CH4_U
- [ ] GREEN
- [ ] ORANGE
- [ ] VIOLET
- [ ] CH4_JS
- [ ] CLEAR
- [ ] NAD
- [ ] UV

Filter Number

- [ ] 0
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [ ] 6
- [ ] 7

Shutter Mode

- [ ] BODARK
- [ ] BOTALT
- [ ] BOTSIM
- [ ] BSIMAN
- [ ] NAONLY
- [ ] WAONLY

Scan Rate

- [ ] 1:1
- [ ] 3:1
- [ ] 5:1

Edit Mode

- [ ] 1:1
- [ ] 1:2
- [ ] 1:3
- [ ] 2:3
- [ ] 3:5

Result Count

79

Rings Node Database Alpha Version.

Column selector tool

refine search

data view | gallery view | x | Choose Columns | + | Download Cart | create permanent link | =

showing results **1** to **50** of **79** next page 50 results per page

Ring Observation ID	Spacecraft Clock Count	Camera	Exposure Duration	Filter Name	Shutter Mode	Edit Mode	Scan Rate
S/IMG/VG1/ISS/34375.56/N	34375	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG1/ISS/34454.19/N	34454	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG1/ISS/34506.44/N	34506	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG1/ISS/34596.37/N	34596	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG1/ISS/34665.49/N	34665	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG1/ISS/34814.48/N	34814	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG1/ISS/34847.04/N	34847	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG1/ISS/34909.25/N	34909	Narrow Angle Camera	0.720000028610229	CLEAR	BOTSIM	1:1	3:1
S/IMG/VG1/ISS/34914.23/N	34914	Narrow Angle Camera	0.479999989271164	CLEAR	NAONLY	1:1	3:1
S/IMG/VG1/ISS/34914.27/N	34914	Narrow Angle Camera	1.44000005722046	ORANGE	NAONLY	1:1	3:1
S/IMG/VG1/ISS/34914.31/N	34914	Narrow Angle Camera	5.76000022888184	UV	NAONLY	1:1	3:1
S/IMG/VG1/ISS/34929.56/N	34929	Narrow Angle Camera	0.360000014305115	CLEAR	BOTSIM	1:1	3:1
S/IMG/VG1/ISS/34931.41/N	34931	Narrow Angle Camera	0.720000028610229	VIOLET	NAONLY	1:1	3:1
S/IMG/VG1/ISS/34931.45/N	34931	Narrow Angle Camera	0.479999989271164	BLUE	NAONLY	1:1	3:1
S/IMG/VG1/ISS/34931.49/N	34931	Narrow Angle Camera	0.959999978542328	ORANGE	NAONLY	1:1	3:1
S/IMG/VG1/ISS/34931.53/N	34931	Narrow Angle Camera	1.91999995708466	UV	NAONLY	1:1	3:1
S/IMG/VG1/ISS/34931.57/N	34931	Narrow Angle Camera	0.479999989271164	CLEAR	BOTSIM	1:1	3:1
S/IMG/VG1/ISS/34933.43/N	34933	Narrow Angle Camera	0.360000014305115	CLEAR	BOTSIM	1:1	3:1
S/IMG/VG2/ISS/41902.24/N	41902	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/42354.55/N	42354	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/42768.19/N	42768	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/42893.36/N	42893	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/42976.33/N	42976	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43023.52/N	43023	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43056.41/N	43056	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43175.56/N	43175	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43221.28/N	43221	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43371.54/N	43371	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43447.44/N	43447	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43584.11/N	43584	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43618.38/N	43618	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43677.34/N	43677	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43760.26/N	43760	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43835.54/N	43835	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43862.48/N	43862	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	1:1
S/IMG/VG2/ISS/43926.14/N	43926	Narrow Angle Camera	0.959999978542328	CLEAR	NAONLY	1:1	3:1

Rings Node Database Alpha Version

refine search

Gallery view still a work in progress!

data view | gallery view | Choose Columns + | Download Cart | create permanent link =

showing results **1** to **50** of **87** next page 50 results per page

Rings Node Database Alpha Version

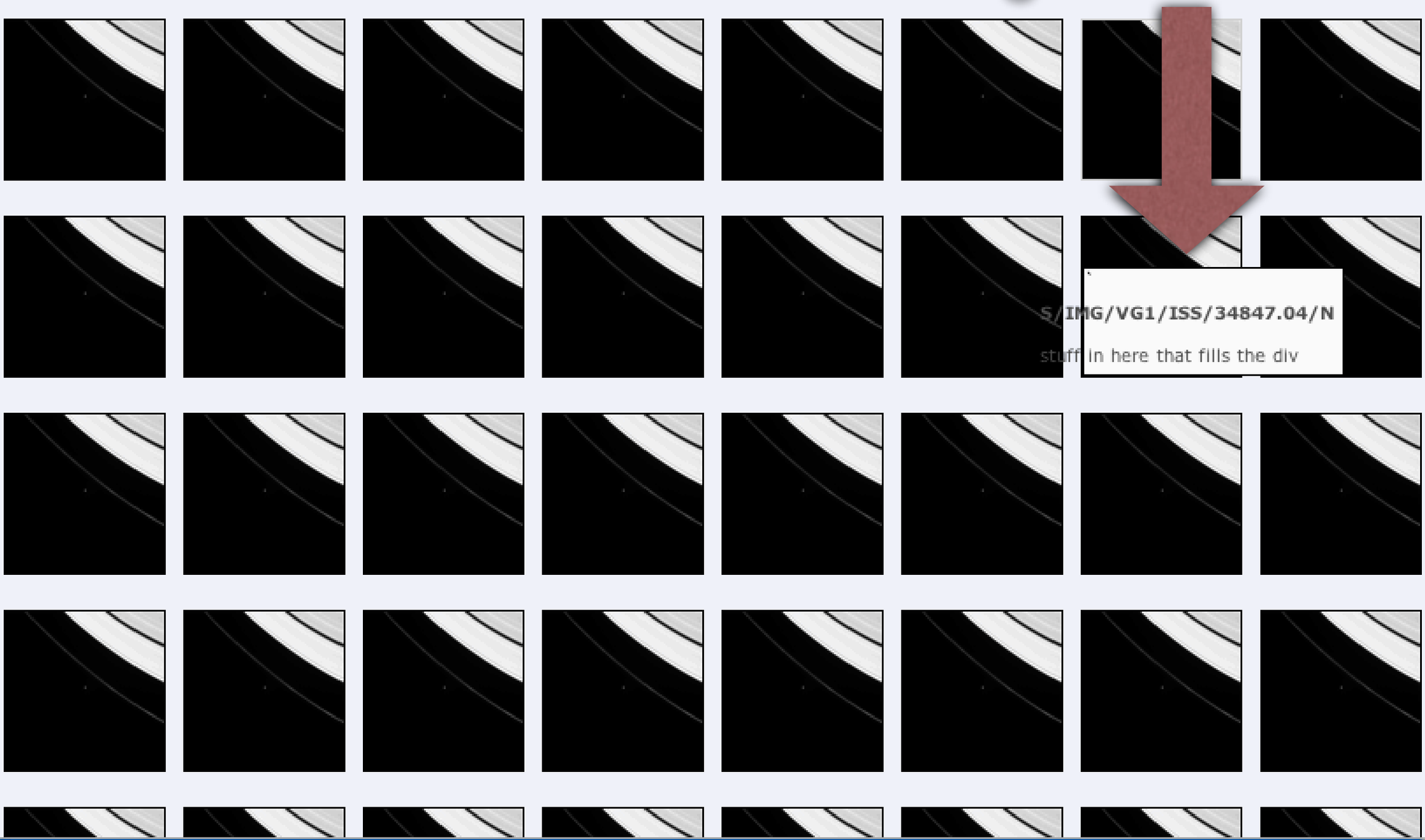
refine search

Gallery view still a work in progress!

data view | gallery view | Choose Columns + | Download Cart | create permanent link =

showing results **1** to **50** of **87** next page 50 results per page

Mouse over an image for more info



Rings Node Database Alpha Version

refine search

Gallery view still a work in progress!

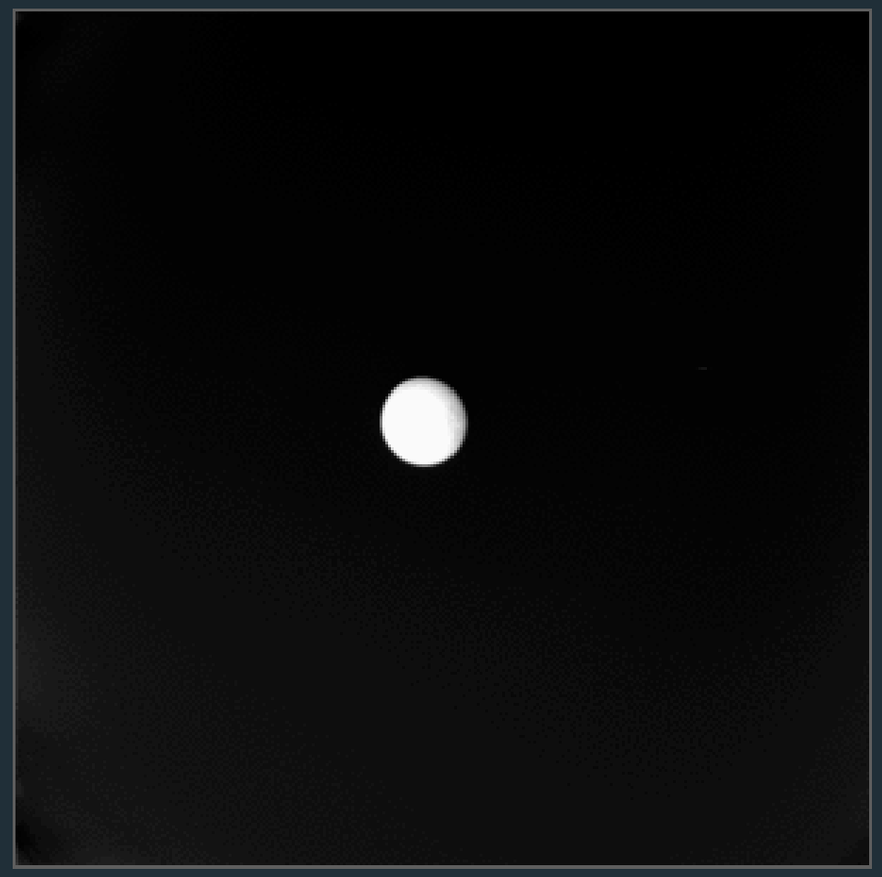
data view | gallery view | Choose Columns + | Download Cart | create permanent link =

showing results **1** to **50** of **87** next page 50 results per page

Click on an image for a detailed summary

Rings Node Database Alpha Version.

Back to Results



S/IMG/VG1/ISS/34929.56/N

Data Products

12 Products Found:

FILE_SPECIFICATION_NAME: ENCELADU/C3492956_CALIB.LBL
VOLUME_ID: VGISS_0004
PRODUCT_TYPE: CALIBRATED_IMAGE
LABEL_TYPE: DETACHED
OBJECT_TYPE: IMG

Summary

- Our database schema solves the "lowest common denominator" problem.
- We know how to solve the "unmappable data" problem.
  - However, it requires in-house generation of all geometric metadata. This is a *huge* undertaking.
- *In principle*, we know how to convert between file formats.
  - However, information is often lost in translation.
  - This is a general problem for all data archives.

Additional Challenges

- How do we provide "thumbnail" representations of products other than images?
  - Cubes, series, astrometry, dust impacts,...
  - This is a general problem for all archives.
- How do we support searches for logical groups of products?
  - Mosaics, movies, scans, etc.
  - These fall at an intermediate level of granularity between a data set and a data product.
- How can we provide and maintain calibration services for raw data products?

Technical Matters

- The system is very fast and responsive due to various "tricks":
  - "AJAX" technology: queries are executing and pages are loading in the background.
  - Query caching: we don't execute the same query twice.
- We are consulting with PDS's user interface "guru" to build in ease of use from the beginning.
- Graphical User Interface elements can always be added.