

ISON



JOHNS HOPKINS
APPLIED PHYSICS LABORATORY

Comet ISON
Observer's Workshop

A Few Logistical Points

- Welcome! The purpose of this workshop is to maximally facilitate collaborative observations of comet C/2012 S2 (ISON) in 2013 – 2014 and their scientific return. If we engender, say, 5 new observations or collaborations and their resulting papers this Workshop will have been a success.

(I.e., we'd like every telescope in the solar system observing the comet. No one place has the best view for more than 1 month.)

- We are NOT trying to answer all questions about ISON here. We are trying to kick-start inquiry and discussion, so please expect some back and forth debate. Members of the audience include professional and amateur astronomers (both ground and spacecraft based), NASA HQ scientists and EPO experts, and media representatives.

- Breakfast, afternoon snacks, and evening drinks will be available in the nook just outside this room. Lunch will be available across the foyer in the cafeteria, or across the street (for those with APL guides).

- Please try to keep on schedule, as we have remote presenters dialing in & a Workshop Dinner at 6:45 PM to attend. (Show of hands please?)

Your Friendly **LOC/SOC**:
The Comet ISON Observing Campaign (CIOC) Team

Carey Lisse (*Chair, JHU Applied Physics Laboratory*)

Yanga Fernandez (*Vice Chair, University of Central Florida*)

Karl Battams (*U.S. Naval Research Laboratory*)

Michael DiSanti (*NASA Goddard*)

Michael Kelley (*University of Maryland*)

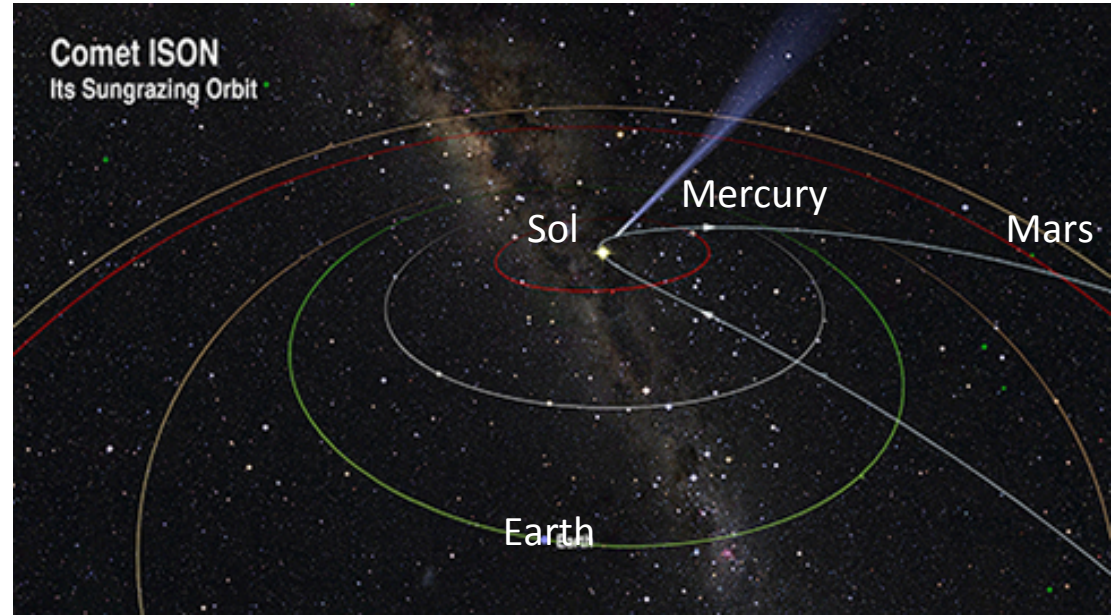
Matthew Knight (*Lowell Observatory*)

Ron Vervack (*JHU Applied Physics Laboratory*)

Elizabeth Warner (*University of Maryland*)

Padma Yanamandra-Fisher (*Space Science Institute*)

Why Care About C/ISON 2012 S1?



- First passage of comet through inner solar system since formation and ejection
 - Long arc from discovery and pre-discovery astrometry
 - More detailed dynamical studies than most “dynamically new” comets
- On a Sungrazing Orbit
 - Discovered much earlier than any previous sungrazer
 - Perihelion Nov 28, 2013 at a distance of 2.7 solar radii
- ISON will have close encounters with Mars, Mercury, Sol, and Earth in 2013.
- This combination of fortuitous observing circumstances for a highly pristine dynamically new Oort Cloud comet has not occurred in the modern era of solar system exploration (that started 50 years ago with the Mariner 2 flyby of Venus).

A Suggested Paradigm to Begin the Discussion

Comet ISON = Comet Kohoutek

- Both are dynamically new Oort Cloud comets discovered at large heliocentric distances, Both were putatively formed in the giant planet region of the solar system's proto-planetary disk.
- Both have apparently large initial steep Q vs r_h dependencies.
- Both are only a few km in radius.
- Both had close solar approaches, followed by post-perihelion near-Earth flybys.
- Both provide excellent natural laboratories to learn about some of the most primitive material left from the gas-rich era of the proto-planetary disk , 0-5 Myr after CAI formation.