

ISSI Team

Characterization of the Transition from Supervolatiles-Driven Activity to Water-Driven Activity in inbound Dynamically New Comets

7-11 March 2022, First Meeting

Agenda v.5

Monday, 7th March

Morning Session – Motivation & Comet Interceptor mission

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|-------|---|---|
| 9:30 | Mark Sargent
<i>ISSI Science Program Manager</i> | Welcome, Introduction |
| 9:45 | Fiorangela La Forgia | Motivation & summary of the project |
| 10:00 | Cecilia Tubiana | Comet Interceptor science goals |
| 10:30 | Raphael Marschall | Dust Hazard Assessment Model |
| 11:00 | <i>coffee break</i> | |
| 11:30 | Aurelie Guilbert-Lepoutre | Gas Coma Modeling for Comet Interceptor |
| 12:00 | Antoine Pommerol | Colour Imager for Comet Interceptor |
| 12:30 | <i>Lunch break</i> | |

Afternoon Session – Observations (gas/dust)

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|-------|-----------------|--|
| 14:30 | Cyrielle Opitom | Observations of volatiles N ₂ ⁺ and CO ⁺ in the optical |
| 15:00 | Cyrielle Opitom | Oxygen G/R ratio and Fe/Ni emissions observed at 2I/Borisov |

→ Merged Session with Rosita's Team

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| 15:30 | Alessandra Migliorini (remotely) | Comet discovery surveys: LSST status update |
| 16:00 | D. Bockelee-Morvan | New findings on distant activity of 29P |
| 16:30 | Aurelie Guilbert-Lepoutre | New results on Centaurs |
| 17:00 | <i>Welcome Drink ISSI?</i> | |
| 17:30 | <i>EOB</i> | |

Tuesday, 8th March

Morning Session – Comets structure, evolution & activity

→ Merged Session with Rosita's Team

9:00	Sebastian Lorek	Overview of the main comet formation models
9:30	Raphael Marschall	Collisional evolution of the Kuiper Belt
10:00	Aurelie Guilbert-Lepoutre	Combined thermal+dynamical evolution modeling of JFCs
10:30	<i>coffee break</i>	
10:45	Bastian Gundlach (remotely)	Comets structure and activity drivers
11:15	Jean-Baptiste Vincent	Activity and erosion, how do cometary surfaces evolve?
11:45	Marco Fulle	Rosetta's Reset
12:30	<i>Lunch break</i>	

Afternoon Session – Activity

14:30	Fiorangela La Forgia	Application of Fulle model to TNG observations
15:30	Discussion, All	
16:00	<i>coffee break</i>	
16:30	Discussion, All	
17:00	Discussion, All	
17:30	<i>EOB</i>	

Wednesday, 9th March

Morning Session – Observations (dust/ices)

- 9:30 Yoonyoung Kim HST dust coma observations
- 10:00 Raphael Marschall The seasonal variation/fluctuations of comets activity
- 10:30 *coffee break*

11:00 Discussion, All

What do activity models still need from observations?

What do comet structure models still need from observations?

What does dust tell us about activity drivers?

What do production rates and mixing ratios tell us about activity driver?

12:30 *Lunch break*

Afternoon Session – Observations

→ Merged Session with Rosita's Team

14:00 Silvia Protopapa (remotely) Water ice and refractories/organics in comets

14:30 Dennis Bodewits (remotely) The CO bump as evidence of past activity?

15:00 Discussion, All

What are the best observable for identifying and characterizing a DNC's activity early on?

Review of DNCs observed up to date, similarities and differences with JFCs

Delineate a profile for a DNC: evolution, structure and observational expectations

16:00 *coffee break*

17:00 Discussion, All

What are the most important questions to answer for our science?

What observations would further constraint the models?

17:30 *EOB*

Thursday, 10th March

Morning Session – Experiments

- 9:30 Antoine Pommerol Laboratory sublimation experiments
- 10:00 Discussion *What observables would give benefit for experiments*
What further experiments could give constraints to the models
- 10:30 coffee break

11:30 Visit to Laboratory in Bern (A. Pommerol)

- 12:30 Lunch break

Afternoon Session – Ideas for observations/Instrumentation

- 15:00 Discussion, All
Ideas for observing proposals
- 16:00 coffee break
- 16:30 Discussion, All
Ideas for new instrumentation?
- 17:30 EOB

Friday, 11th March

Morning Session – Scheduling Activity

- 9:00 Discussion: next steps
- 9:30 Discussion: papers
- 10:30 coffee break
- 11:00 Discussion: Dates for next meeting
- 12:00 End of Meeting

Participants:

- Fiorangela La Forgia
- Dominique Bockelee-Morvan
- Cecilia Tubiana
- Sebastian Lorek
- Cyrielle Opitom
- Yoonyoung Kim
- Raphael Marschall
- Antoine Pommerol
- Jean-Baptiste Vincent
- Aurelie Guilbert-Lepoutre
- Marco Fulle (external collaborator)

- Bastian Gundlach (remote attender)
- Dennis Bodewits (remote attender)
- Alessandra Migliorini (remote attender)
- Silvia Protopapa (remote attender)