

Deep Impact Lessons Learned

8/10/10

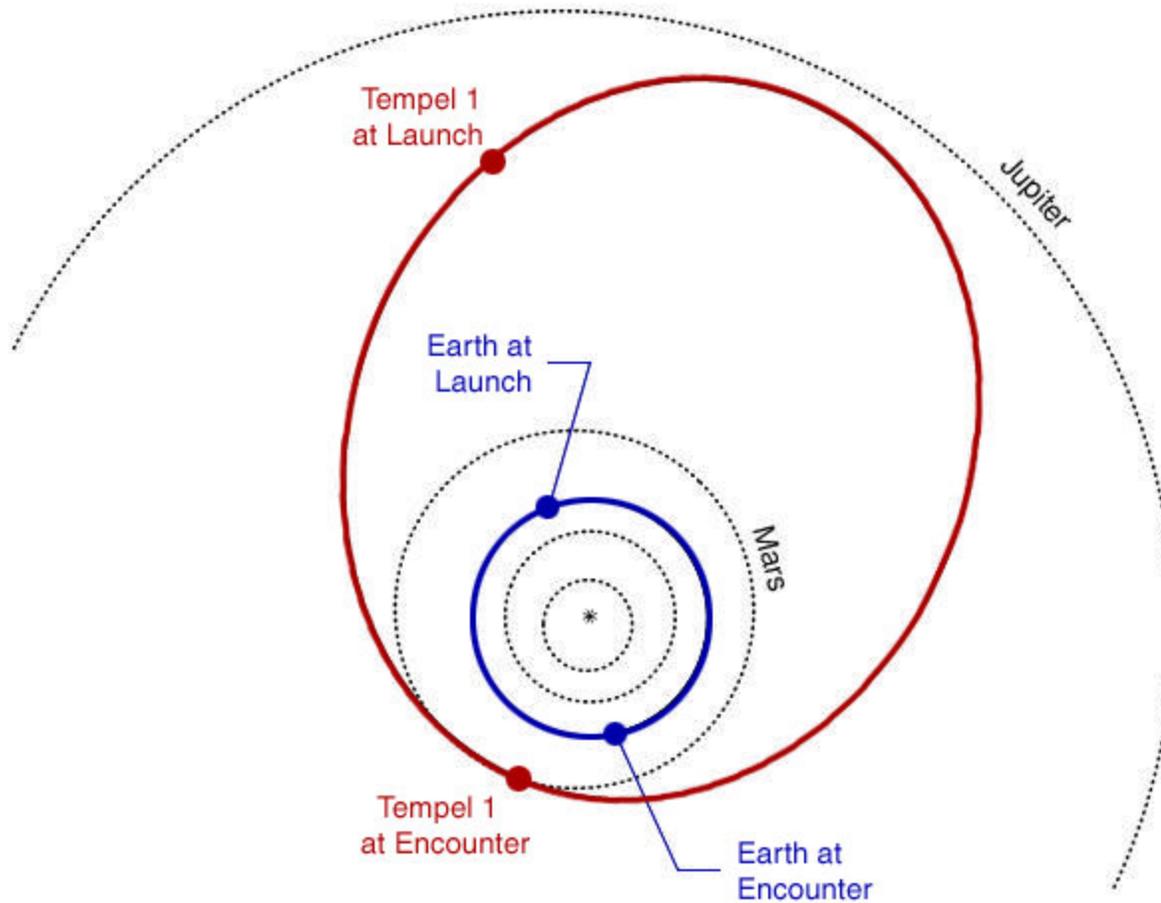
Lindley Johnson



Deep Impact Mission



The Orbit of Comet Tempel 1



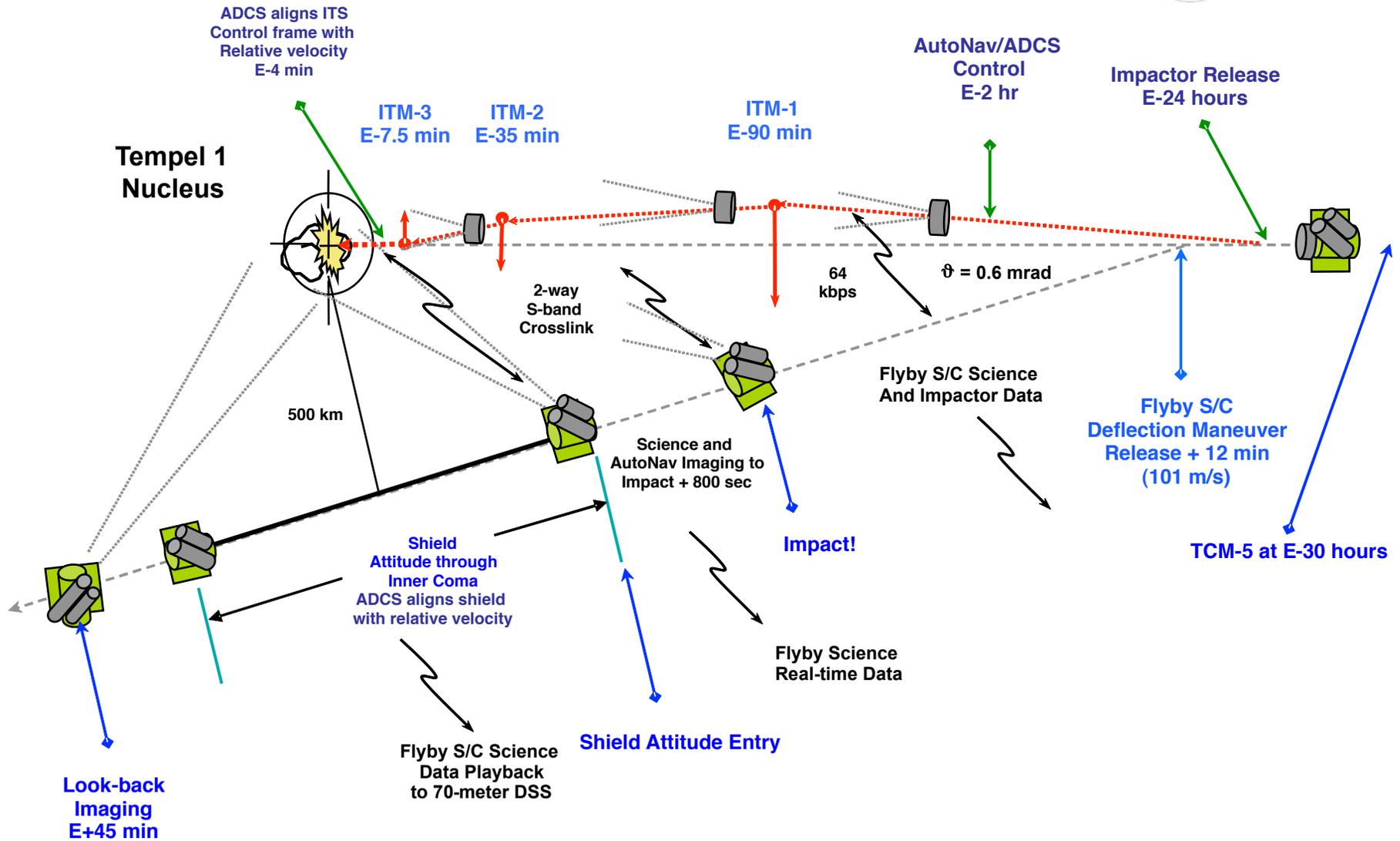


The Spacecraft(pl)



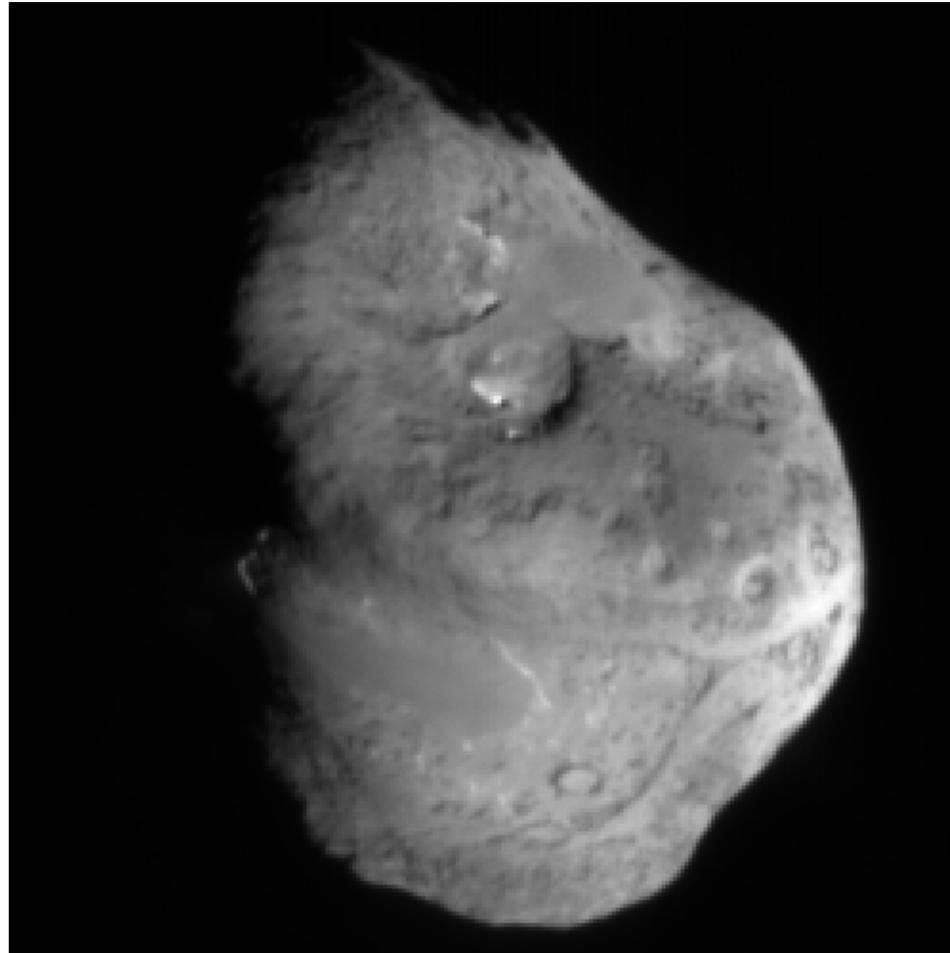


Deep Impact Encounter Schematic





Comet Tempel 1





Movie Time



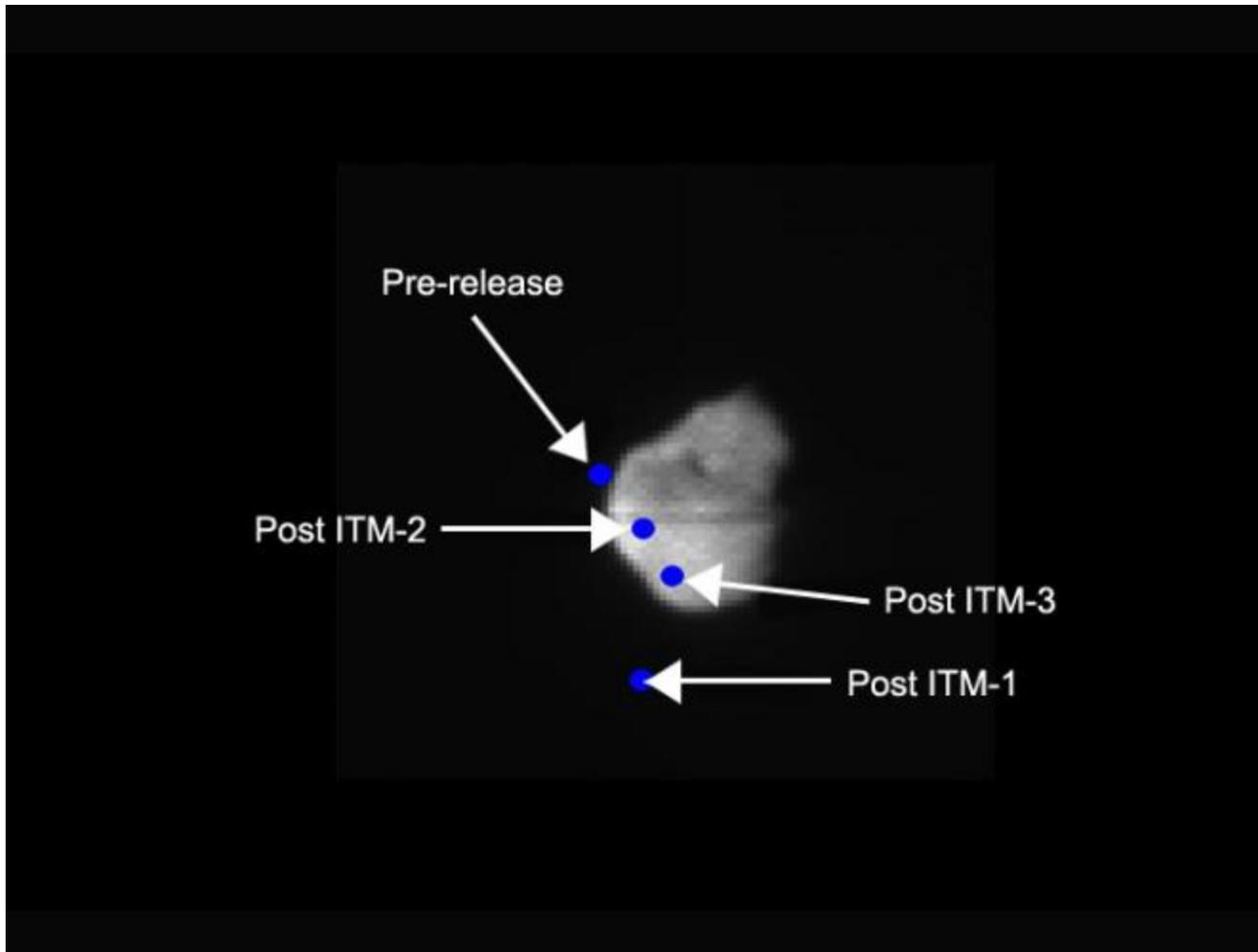
Impactor Approach

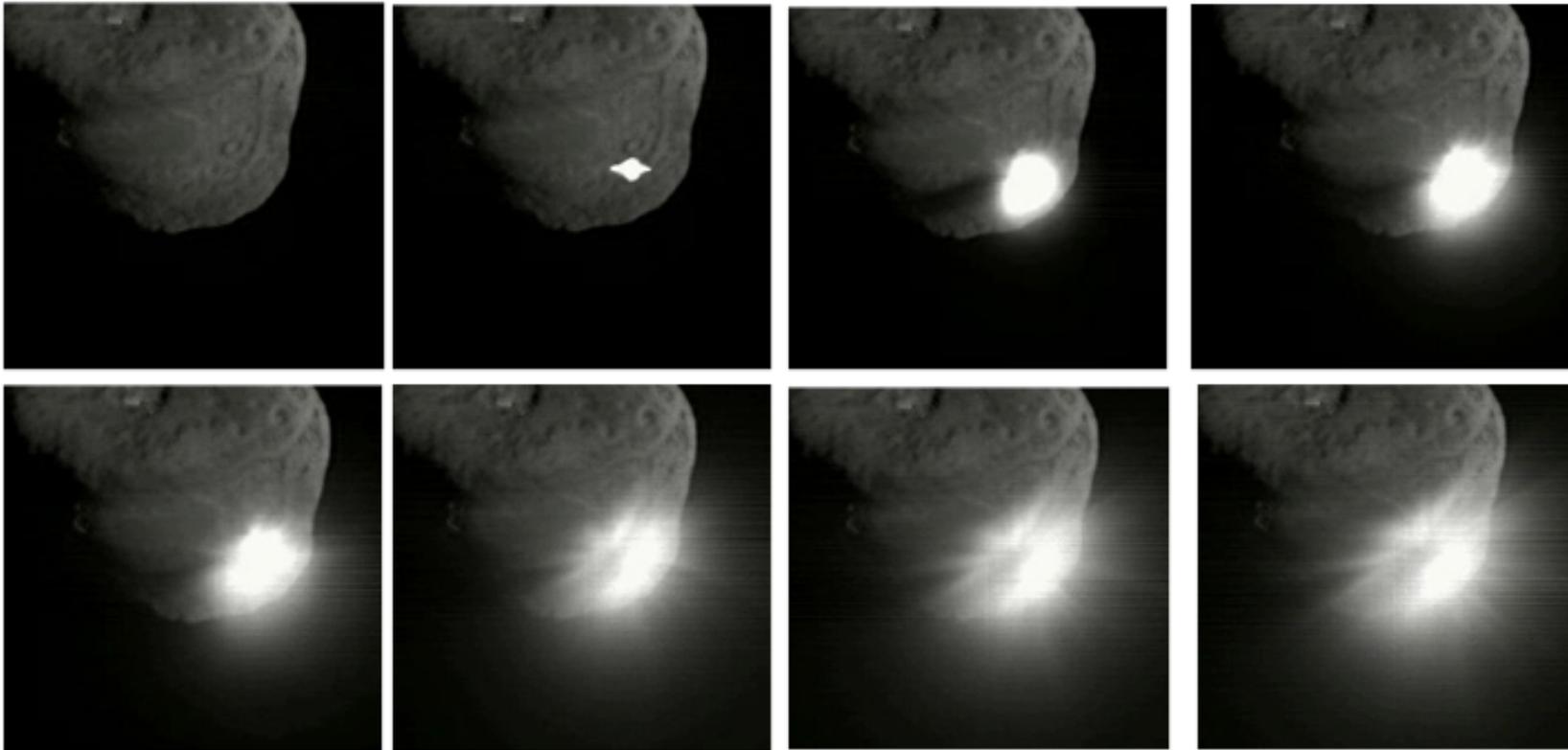
High Resolution Imager of Impact

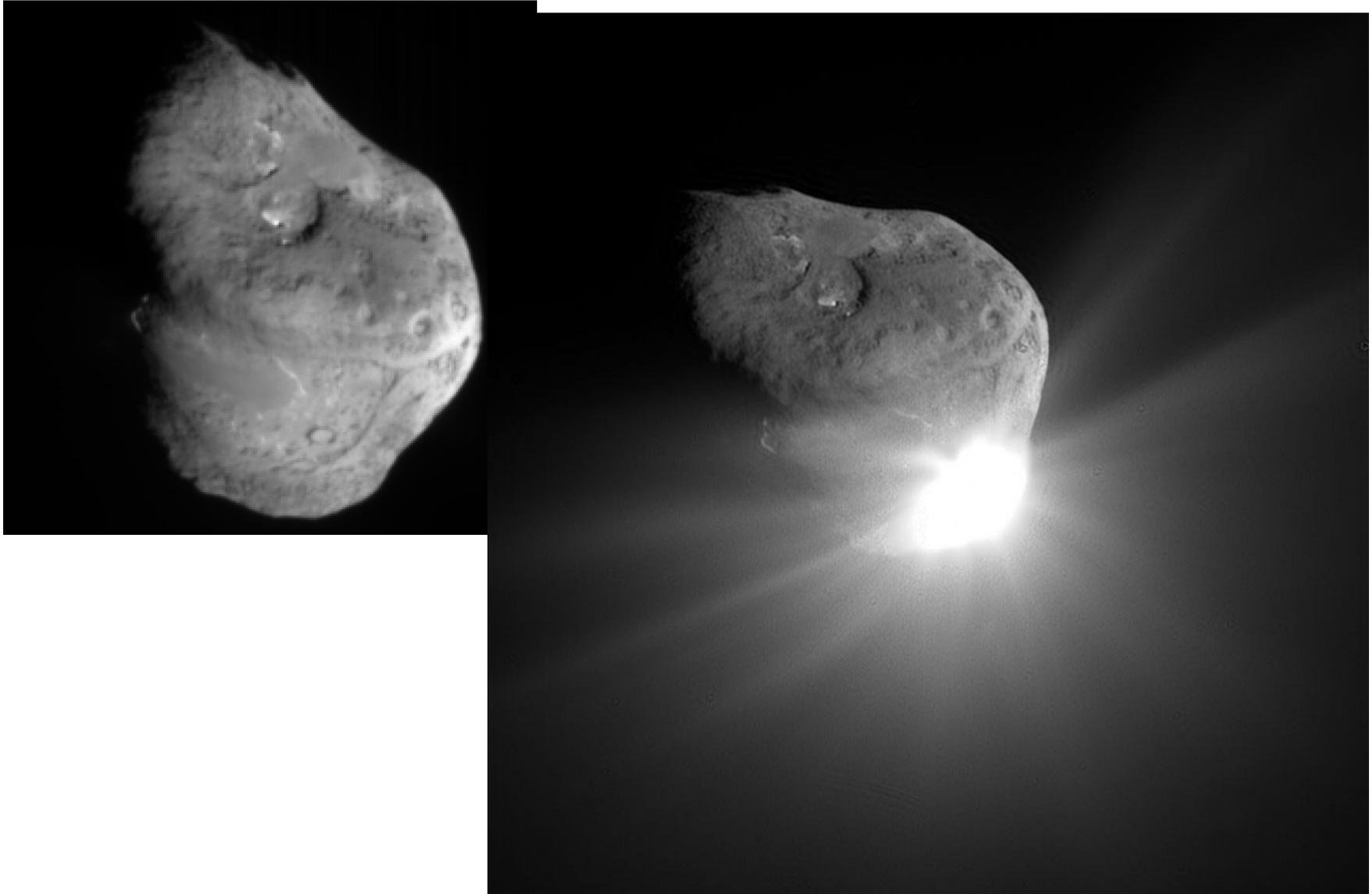
Medium Resolution Imager of Impact



Zeroing In on Target









Major Lessons Learned:



- Plan to be surprised!
 - Tempel 1 didn't look like we thought it would.
 - Tempel 1 didn't react to stimulus (in this case, impact) the way most thought it would.
 - Material was much finer than was planned for.
- This probably means that a pre-cursor mission to the specific initial target body is a must for mission confidence and safety.
- It doesn't mean you don't need to pre-plan activities and events to the nth degree, because the pre-plan and exercise will help to establish firm baselines.
- It does mean there must be a well established and exercised process for handling the unexpected and adapting the plan dynamically during the mission.