Clip 3: Recreating the Comet - Transcript

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| 01:26:06 | **GRAPHICS ONSCREEN:**  NASA’S JET PROPULSION LABORATORY,  CALIFORNIA, USA |  |
| 01:26:09 |  | NARRATOR:  To build up a better picture of what Rosetta’s flight team is up against, Rosetta’s NASA Project Scientist, Doctor Claudia Alexander and her team are recreating the closest thing to a coma on earth. In this experiment, a miniature comet made of ordinary ice and dust is placed into a vacuum chamber. |
| 01:26:34 |  | NARRATOR:  The temperature is set to minus 190°F <87.78°C> and all the air is sucked out. |
| 01:26:43 |  | NARRATOR:  It’s as if this scaled down comet is in deep space; just like Churyumov-Gerasimenko. |
| 01:26:52 |  | NARRATOR:  The simulation will demonstrate what’s happening on the comet’s surface. |
| 01:26:57 |  | DR. CLAUDIA ALEXANDER:  Okay, So Lauren, are we ready? |
| 01:26:59 |  | LAUREN:  Yes, it’s ready to go. |
| 01:27:00 |  | DR. CLAUDIA ALEXANDER:  Okay. |
| 01:27:04 |  | NARRATOR:  At first, the mini comet remains mostly dormant; but as the sun’s heat intensifies, the comet experiences a sudden and explosive outburst. |
| 01:27:18 |  | DR. CLAUDIA ALEXANDER:  Oh, there goes a good one, right there. |
| 01:27:21 |  | NARRATOR:  Massive jets of gas spew out of its surface, in a process like sublimation. |
| 01:27:29 |  | DR. CLAUDIA ALEXANDER:  Sublimation is where ice turns directly to gas, without having any water involved; so we all know what evaporation is, sublimation is when we go from a solid to a gas immediately. |
| 01:27:41 |  | NARRATOR:  When ice heats up in a vacuum, such as in space, it doesn’t melt. Instead, it’s much more explosive. |
| 01:27:52 |  | DR. CLAUDIA ALEXANDER:  And as this sublimating gas comes out, mostly at supersonic speeds, it carries with it the dust particles from the surface; and that is what causes a comet’s coma to develop. |
| 01:28:04 |  | NARRATOR:  Osiris’s data shows that comet, Churyumov-Gerasimenko, is in the early stages of forming a coma. |