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**ATMOSPHERIC TRAJECTORY AND RECOVERY OF THE OSCEOLA
METEORITE (JANUARY 24, 2016)**

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ABSTRACT

We present a summary on the trajectory reconstruction, dark flight simulations and the pre-impact orbit estimate for the day-light fireball observed over northern Florida (USA), on January 24, 2016 at 10:27 EST (15:27 UTC) as well as provide comparison of this event with the other meteorite-producing fireballs. The lower part of the atmospheric trajectory was retrieved from the weather radar indicating meteorite signatures and enabling prompt meteorite recovery shortly after the fall. The radar returns were strong, found at multiple altitudes and located on multiple stations: KJAX, KVAX and KTHL. Additionally, a publicly available dash-cam video made by Erick Williams, was carefully calibrated and taken into account in reconstruction of the luminous part of the trajectory. We have estimated pre-atmospheric dynamic meteoroid mass (and also the way it changed along the atmospheric trajectory) by analysing drag and mass-loss rate retrievable from the observations. The data were processed thoroughly with account for the actual weather conditions at the time and location of the fireball.