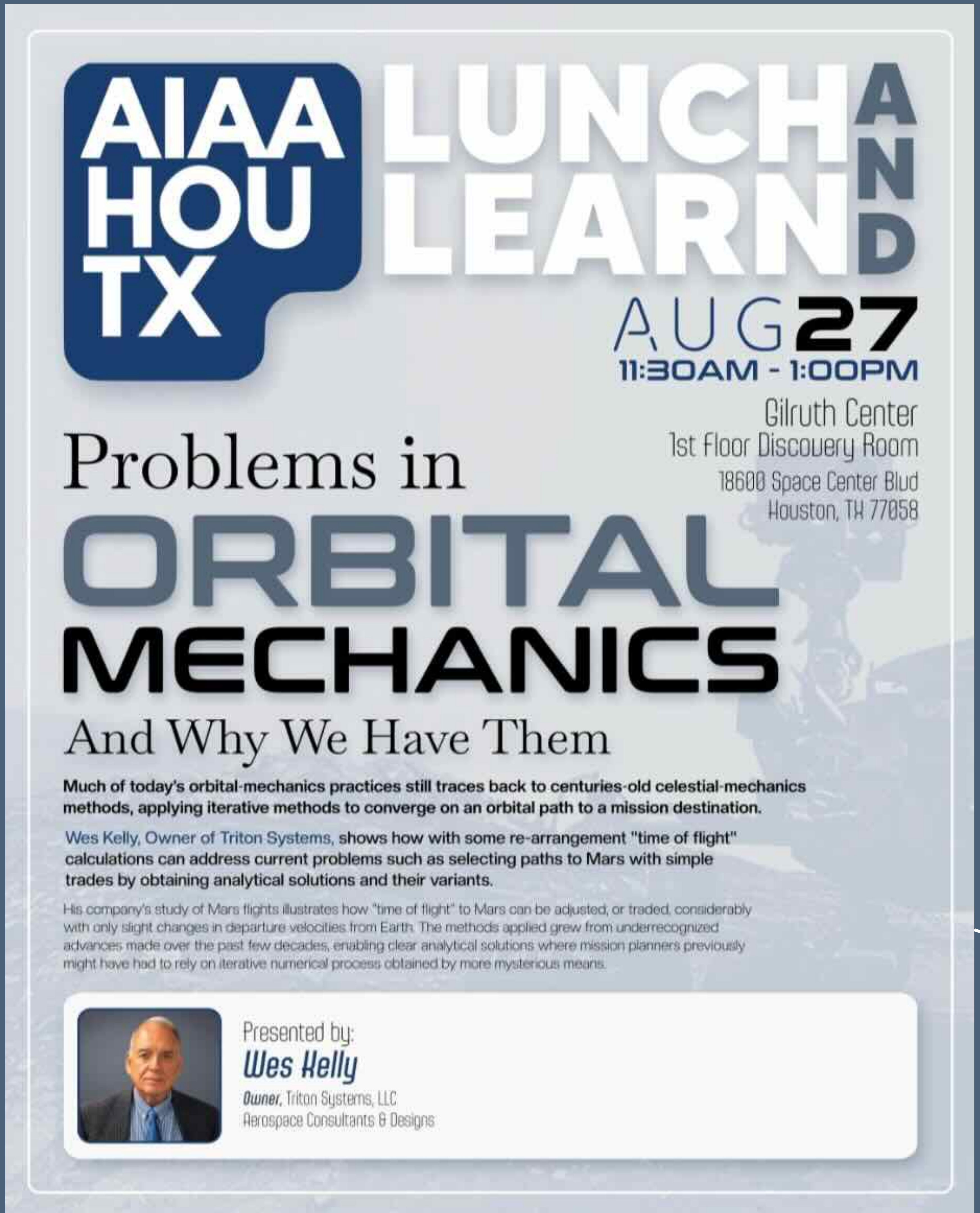


Date: Thursday, August 27, 2026

Link to YouTube for a Recording of this Event.

Gilruth Center Foyer

Flyer Design by Jake Peery of AIAA Houston

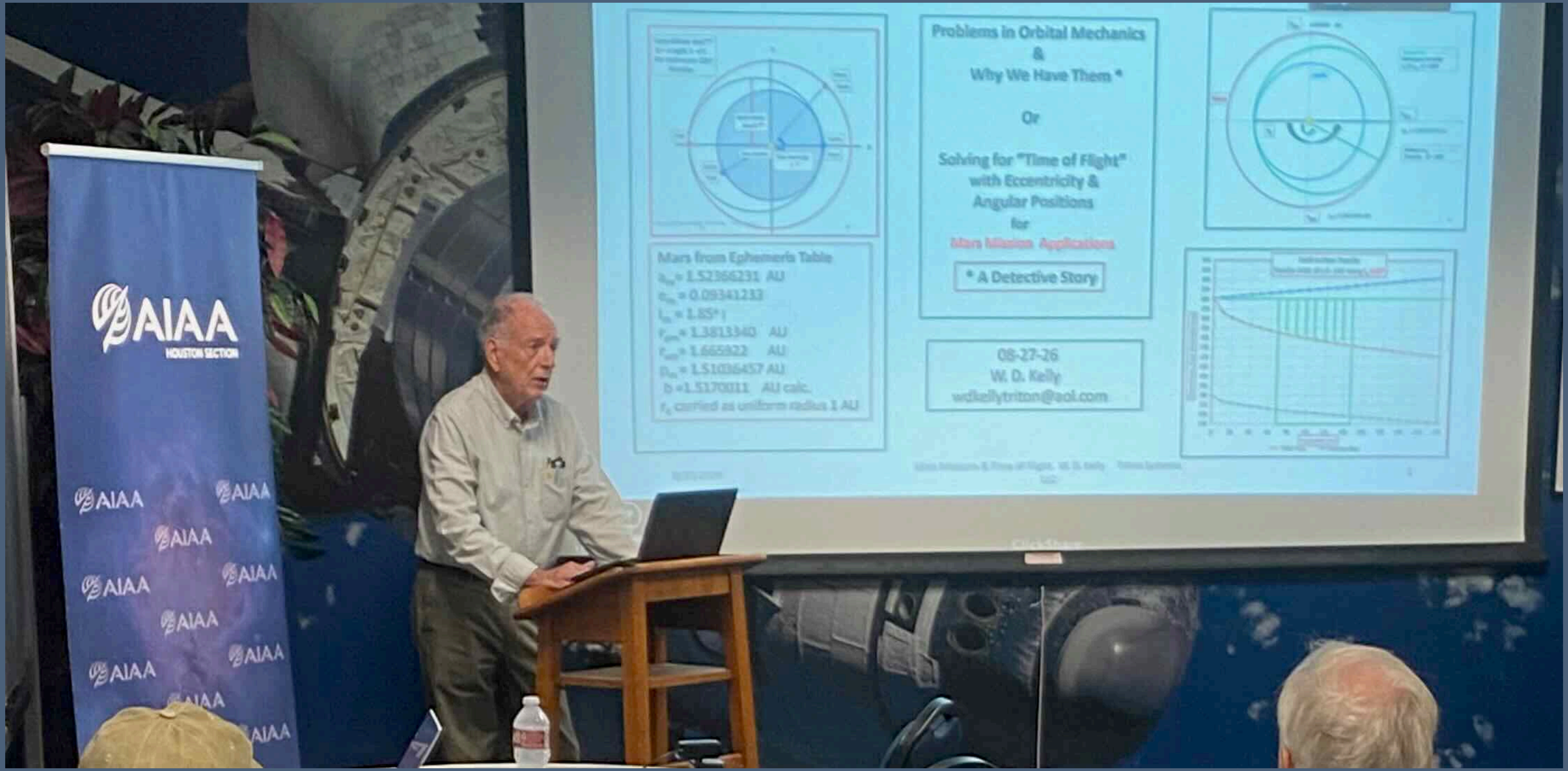
The American Institute of Aeronautics and Astronautics (AIAA)

Venue: NASA/JSC Gilruth Center Discovery Room

Photo Credits: AIAA Houston

The AIAA Houston Astrodynamics Technical Committee Chair is Dr. Albert Allen Jackson IV.

Topic Introduced by Dr. Segun Thomas



Wes Kelly, Triton Systems LLC

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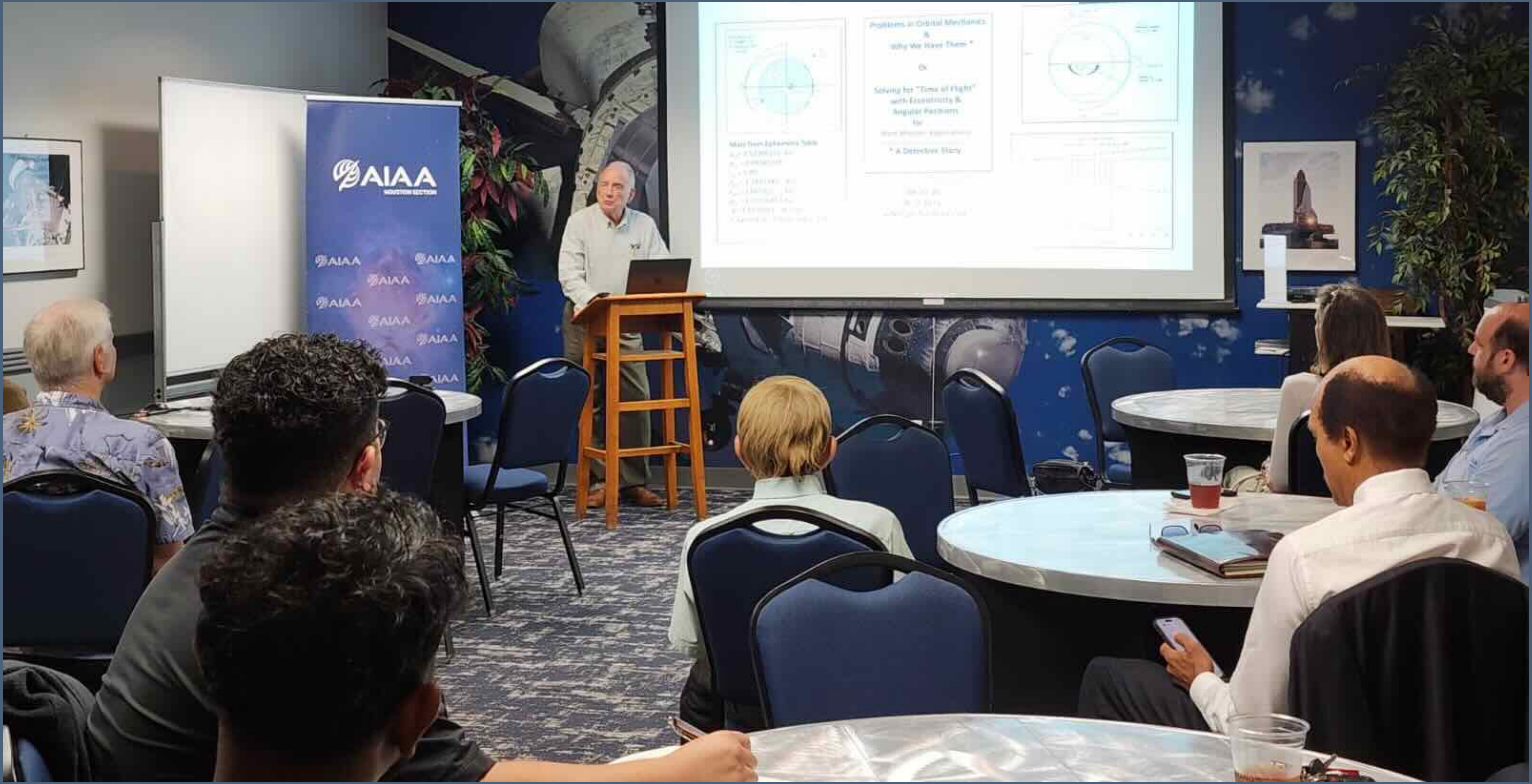
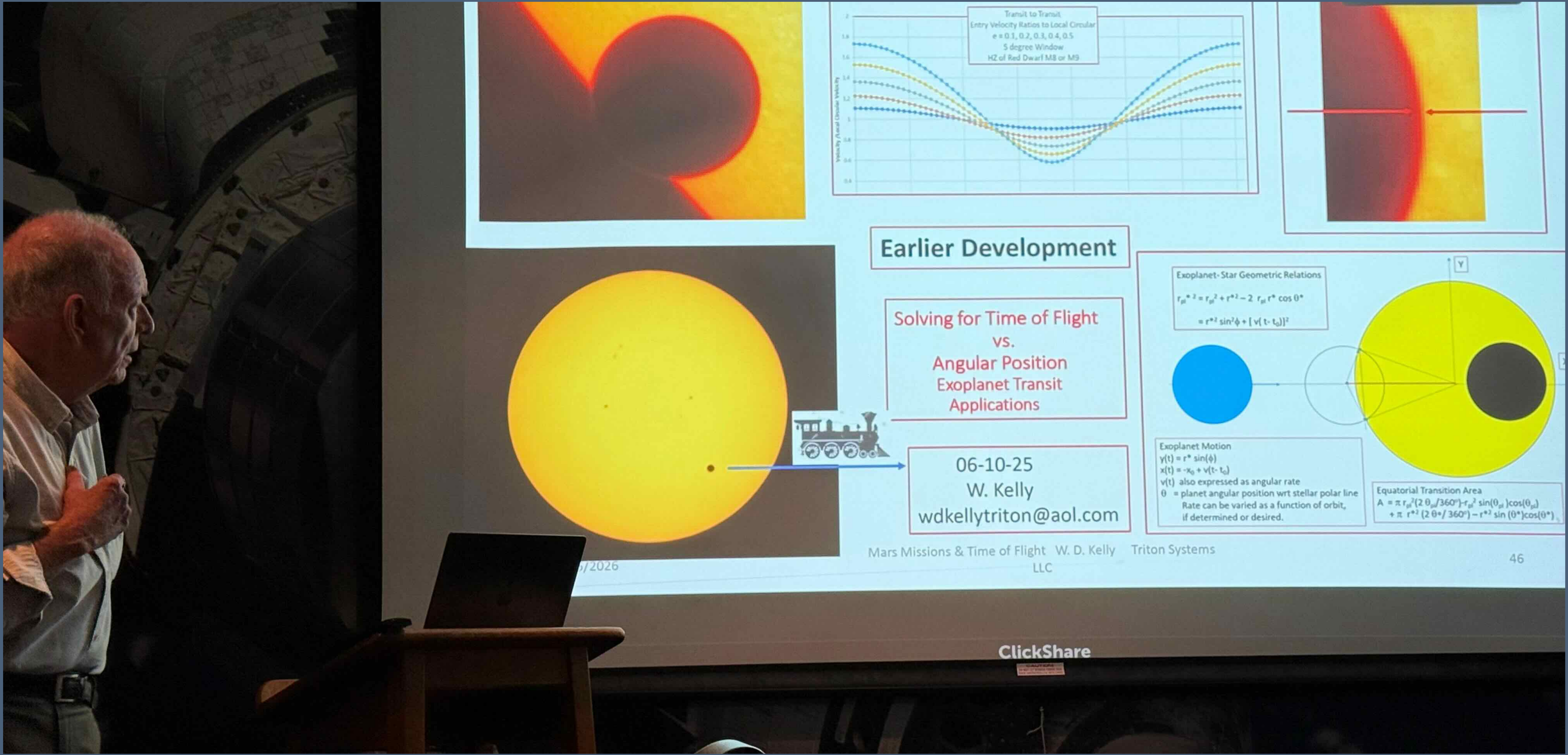


Wes Kelly, Triton Systems LLC

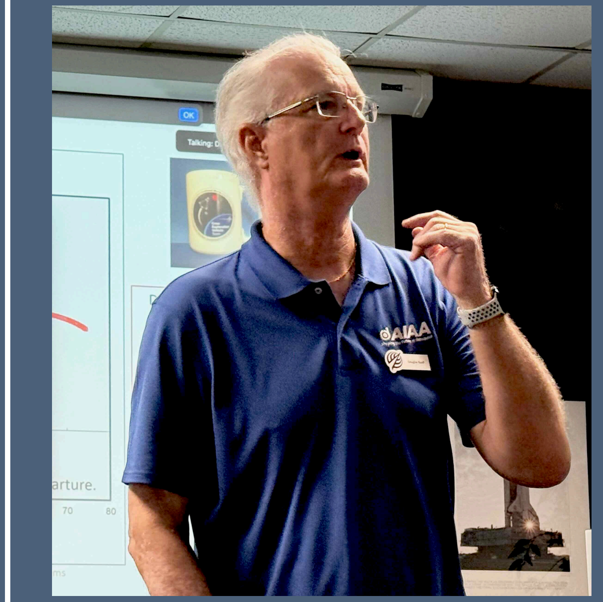


Wes Kelly, Triton Systems LLC

Wes Kelly, Triton Systems LLC
Topic Introduced by Dr. Segun Thomas

Thanks to NASA/JSC Gilruth Center employees and all in AIAA Houston who helped with this event, especially AIAA Houston Chair John Rangel. Attendance was 17 people in the room and 21 people online. Dr. Svetlana Hanson hosted the online Zoom call & published the recording on YouTube.

Charlotte Newell is the new networking and socials lead at AIAA Houston. She worked for Collins Aerospace and Intuitive Machines. She is now working as a mechanical engineer for EON Innovations while finishing her Bachelor's Degree at Embry-Riddle.



Douglas Yazell, AIAA Houston Chair of the History & International Committees

Topic: Problems in Orbital Mechanics & Why We Have Them, by Wes Kelly of Triton Systems LLC
Date: Thursday, August 27, 2026
Time: 11:45 AM - 1:00 PM
Place: NASA/JSC Gilruth Center Discovery Room

Much of orbital mechanics application and instruction is based on celestial mechanics as practiced centuries ago, applying iterative methods to converge on an orbital path to a mission destination.

Yet with some re-arrangement, "time of flight" calculations address current problems such as selecting paths to Mars with simple trades by obtaining analytical solutions and their variants.

Our study of Mars flights showed how "time of flight" to Mars can be adjusted (or traded) considerably with only slight changes in departure velocities from Earth.

The methods applied grew out of developments over the last few decades not widely known, allowing analytical solutions where previously mission planners might rely on iterative numerical process obtained by more mysterious means.

The American Institute of Aeronautics and Astronautics (AIAA) started in 1963 by merging two other professional societies that existed since the early 1930s. AIAA has about 20,000 professional members and 15,000 university & high school members, as well as about 100 corporate members.

AIAA Houston has about 1200 members. Student chapters include University of Houston (UH) and Texas A&M University.

AIAA Houston also includes Mexico.

After Air Force service in Europe with a flying unit, Wes Kelly attended the University of Michigan and University of Washington (Seattle) obtaining Bachelor and Master degrees, respectively, in aerospace engineering, doing additional studies in astrophysics.

In the course of his engineering career he spent a significant portion in support of the development of human spaceflight (that is, the Space Shuttle here in Houston in the 1970s and the International Space Station - ISS - in the 1990s, plus a number of payload or launch systems work elsewhere).

As an entrepreneur, Wes and colleagues founded Triton Systems LLC, which developed a partially reusable launch system concept submitted to the ISS resupply competition and later addressed toward small satellite launch.

In recent years he has worked as an adjunct instructor at UHCL teaching astronomy and electives such as exoplanets and orbital mechanics, topics related to today's talk.