

# Commercial and Private Deep-Space Mission Concepts: 1970 to 2013

Rex Ridenoure, IZUP LLC      rexridenoure@gmail.com

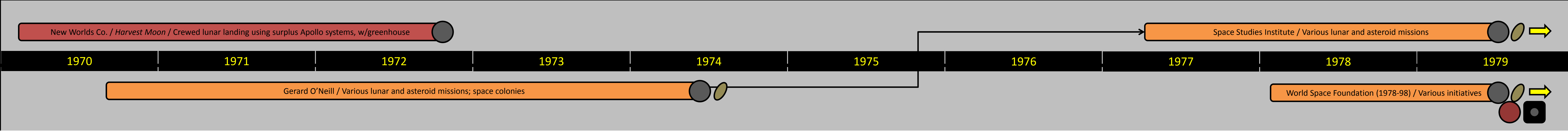
**Principal Outcome of Projects**

- Successful space mission
- Evidence of progress (funding and/or hardware) in support of an actual mission
- Projects under development which shaped (or are shaping) thought and markets
- Projects which remained conceptual and overall did not progress toward launch

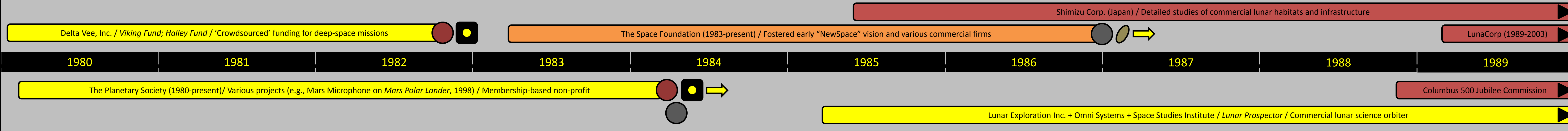
**Primary Destination/Focus of Projects**

- Moon
- Cis-lunar space
- Near-Earth Asteroids
- Mars
- Helio-centric orbit or solar system escape

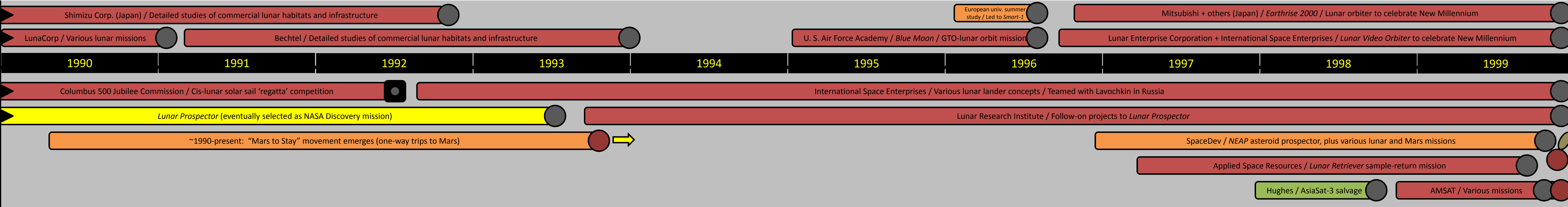
1970s



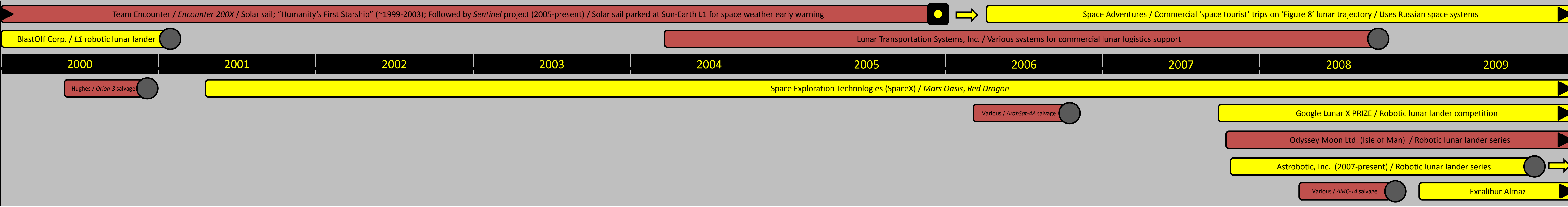
1980s



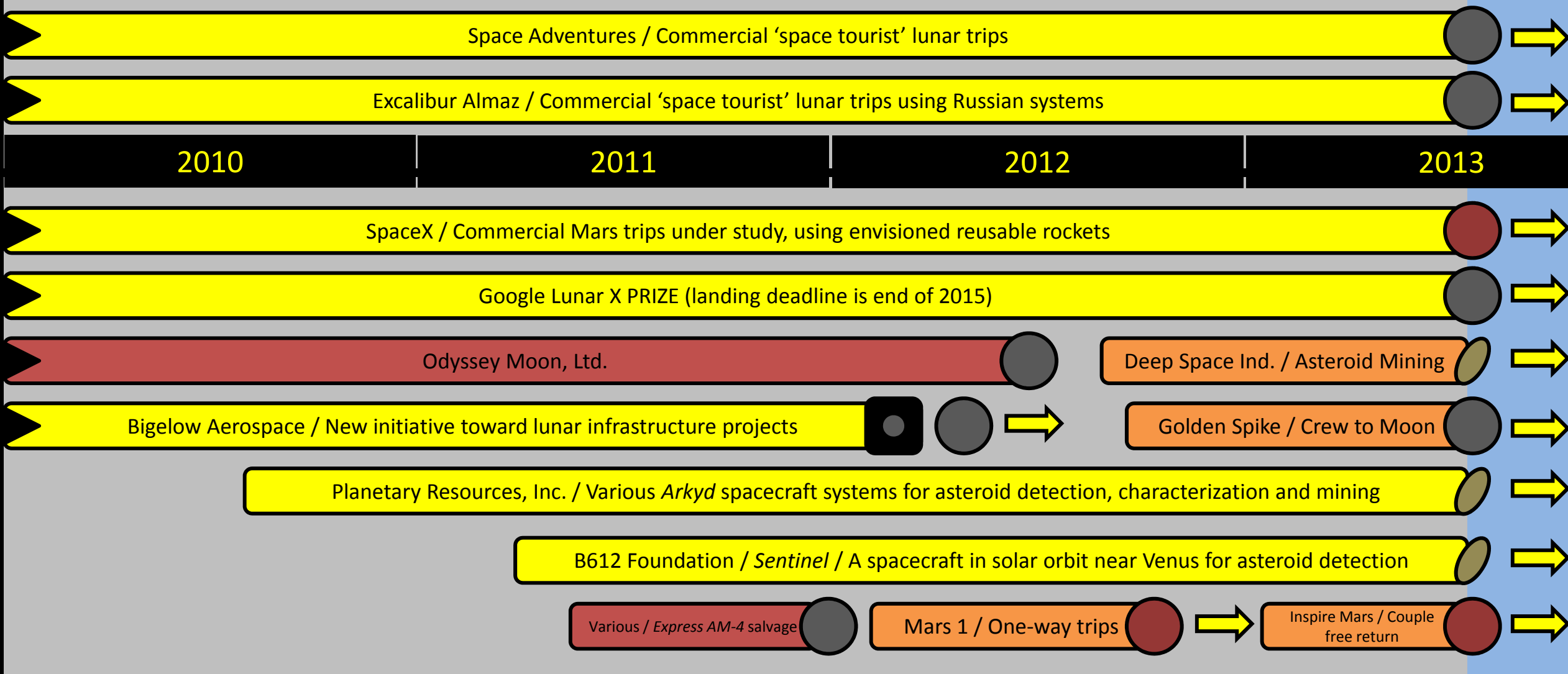
1990s



2000s



2010s



**Fun Facts**

- "Deep Space" in the context of this poster is any place in space well beyond the Geosynchronous Earth Orbit (GEO) arc, where all current commercial space activity ends.
- For years, commercial space activity has accounted for about 65-75% of global space activity, or about \$200 billion of the ~\$300 billion total market in 2012, yet none is deep-space activity!
- Since 1970, approximately 50 commercial, private, non-profit or academic efforts have been attempted to field a space system into deep space.
- The first known serious attempt to market, raise funds for and execute a commercial mission beyond the GEO arc was the *Harvest Moon* project (1970-72), conceived and marketed by the New Worlds Company. Surplus Apollo hardware would send a U.S. and Soviet crewmember to the lunar surface to erect a long-duration greenhouse experiment.
- The first successful effort to actually raise private funds to support an actual deep-space mission was non-profit Delta Vee, Inc.'s Viking Fund (1980-82), which raised ~\$100k to support the *Viking* landers on Mars.
- Only one commercial spacecraft has ventured well beyond the GEO arc: the stranded *AsiaSat-3* communications satellite, which was sent in 1998 on two lunar swingbys to crank its orbit and reach GEO.
- There are 6-10 currently active projects which seem to have the potential of sending another commercial/private/non-profit/academic spacecraft into deep space before 2020.