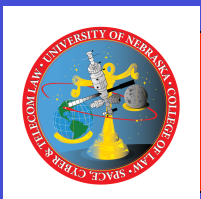


# From Space Tourists to Unruly Passengers?

## The US Struggle with 'On-Orbit Jurisdiction'

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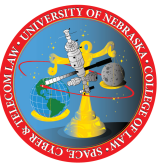
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# Introduction

- 2015: real take-off 'space tourism' (?)
  - Virgin Galactic & XCOR
- 2017: crewed flight to ISS (?)
  - Space-X, Blue Origin, Sierra Nevada, Boeing
- Issue of non-professionals on board
  - Range of human activities on board no longer necessarily  $\approx$  only related to actual spaceflight; commercial, civil, criminal activities can now be envisaged



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# Jurisdiction & outer space

## ■ General aspects

- Classic: territorial & nationality-based ('personal')
- Art. VIII, Outer Space Treaty: adds possibility of quasi-territorial jurisdiction to registered space objects & personnel thereof
- Registration Convention: national & international registration → jurisdiction of single state
  - ◆ Applicable to space objects "launched into Earth orbit and beyond" – may well include sub-orbital vehicles!
- Example: US Patents in Space Act



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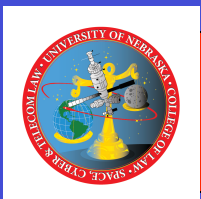
# Jurisdiction & spaceflight

## ■ Special case ISS

- Individual modules registered (Art. 5, IGA)
- IPR regime: quasi-territorially based (Art. 21)
- Criminal law: primarily active personality; subsidiary passive personality (Art. 22)

## ■ Issue of 'space object'

- Definition ultimately hinges on ... 'outer space'
- Qualification as 'aircraft' also entitles exercise quasi-territorial jurisdiction



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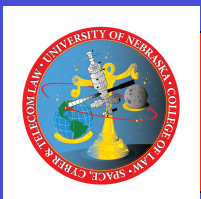
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# The US context (1)

## 1. NASA jurisdiction over public manned space activities

- Exercise of control over US civil space activities as mandated by 1958 NASA Act *et seq.*
- Employment contracts with NASA astronauts
- Legal arrangements for guest astronauts
- Took care of ISS 'space tourism':
  - ◆ *Ad hoc* arrangement for Tito's visit, 2001
  - ◆ Principles Regarding Processes & Criteria for Selection etc. of ISS Crewmembers, incl. SFPs



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# The US context (2)

## 2. FCC jurisdiction over space coms

- 1934 Communications Act *et seq.*
- Use of radio frequencies also for spaceflight
- Exercise jurisdiction mainly by *a priori* license

## 3. NOAA jurisdiction over space remote sensing activities

- 1984/1992 Land Remote Sensing Acts
- Operation RS systems & handling ensuing data
- Exercise jurisdiction mainly by *a priori* license



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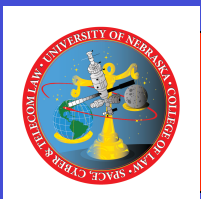
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# The US context (3)

## 4. FAA jurisdiction launch & re-entry

- 1984/1988/2004 Commercial Space Launch Act
- Launch → re-usable vehicles → re-entry
- Definitions 'launch' & 're-entry' phases
- Focus on safety launch & re-entry operations
- Note evolution private manned spaceflight:
  - ◆ Sub-orbital hops – ≈ seamless transition launch–re-entry & safety considerations omnipresent
  - ◆ Trips to orbit – longer duration, but so far public
  - ◆ Trips to & stays at space hotels – long duration private



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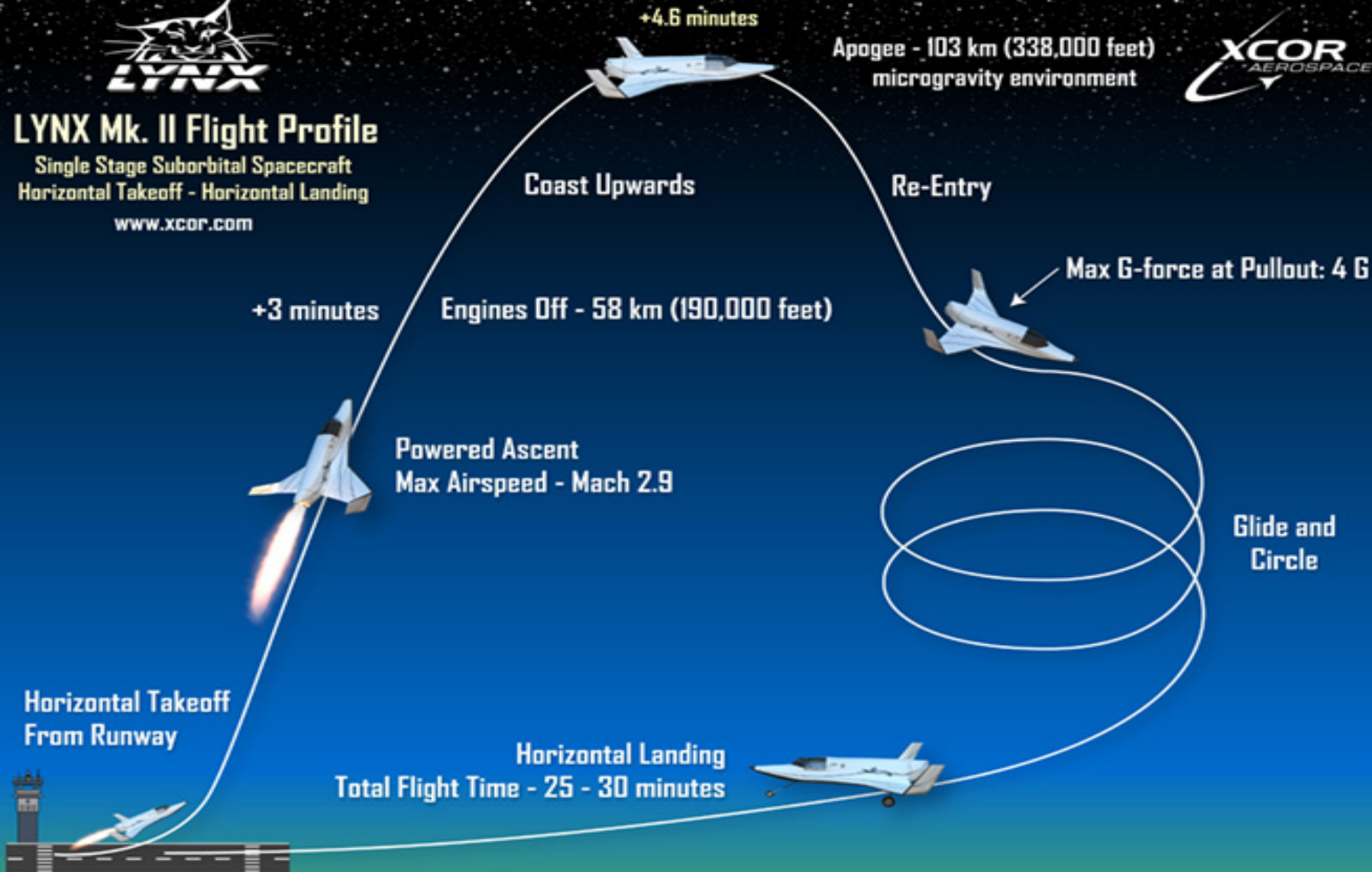
# Impending sub-orbital trajectories



## LYNX Mk. II Flight Profile

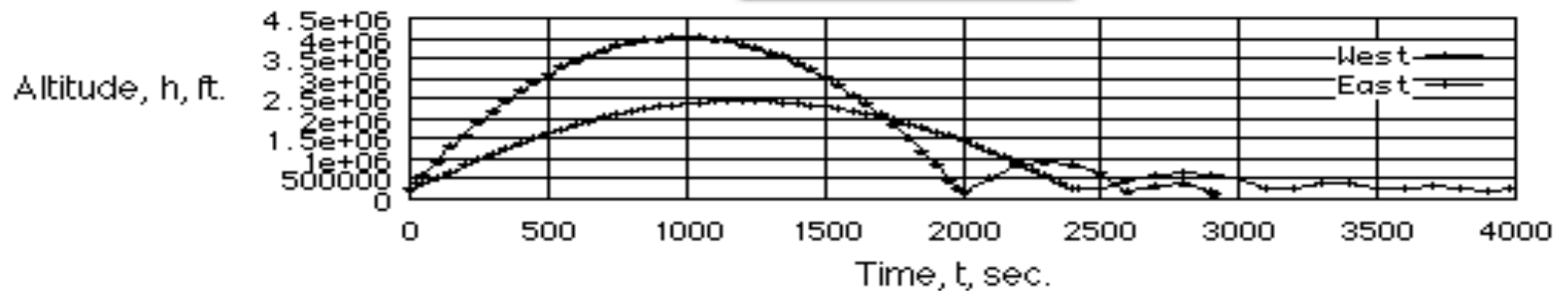
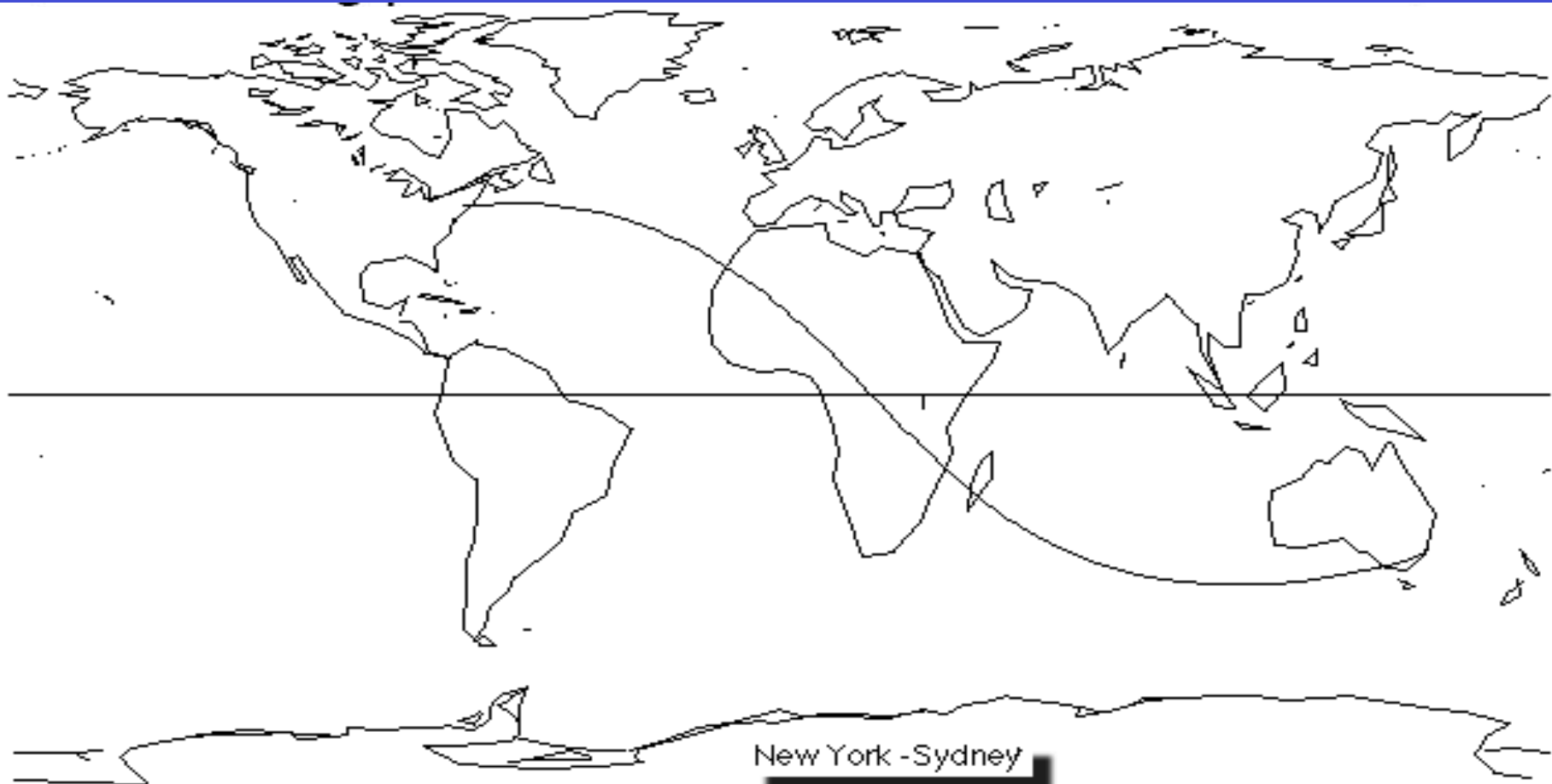
Single Stage Suborbital Spacecraft  
Horizontal Takeoff - Horizontal Landing

[www.xcor.com](http://www.xcor.com)

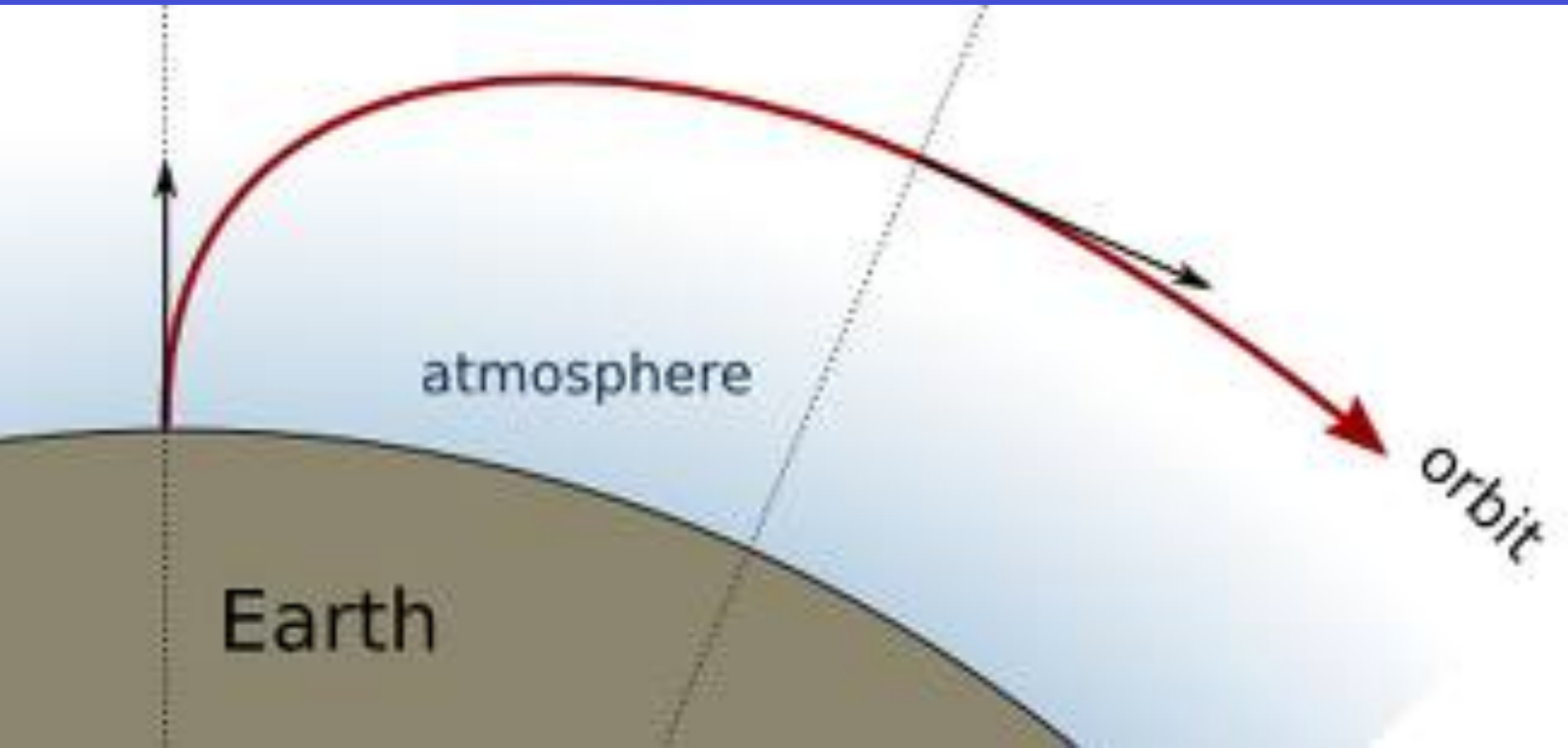




# Future suborbital trajectories (1)



# Future (sub)orbital trajectories (2)



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# US: 'on-orbit' jurisdiction?

- Gap opening up esp. on commercial & civil & enforcement criminal jurisdiction
  - US Federal Criminal Code already applies
  - ↔ No 'police powers' like aircraft commanders
    - ◆ Would certainly apply to 'unruly passengers'
  - No general applicability commercial or civil law
    - ◆ 'Carve-outs' required for use radio-frequencies (FCC) & remote sensing activities (NOAA)
    - ◆ Alignment necessary with FAA (!) jurisdiction over National Air Space



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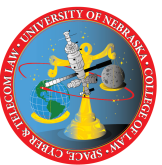
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# Concluding remarks

- As long as no airspaces other countries would become involved:
  - No need to address delimitation-issue ‘airspace—outer space’ head-on
  - No need to determine whether ‘on-orbit’ jurisdiction should not read ‘in-space’ jurisdiction
  - No need to address definition of ‘space object’ with reference to ‘outer space’
  - Some legal action nevertheless warranted as of today



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