JPL Technologies and the Future
Opportunities for Collaboration

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Goal of Technology Collaborations at JPL

Strengthen JPL's technological future and funding by teaming with Industry.
JPL Technology Needs and Opportunities

- What drives JPL?
- What technologies are important to JPL’s future?
- How can industry partner with JPL?
# JPL "Leadership" Technology

## Technologies to enable:

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<thead>
<tr>
<th>Solar System &amp; Mars</th>
<th>Astronomy &amp; Physics</th>
<th>Earth Science</th>
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<tbody>
<tr>
<td><strong>Autonomous regional mobility (surface and atmosphere) and safe landing</strong></td>
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<td><strong>Deep space communications and interplanetary network</strong></td>
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<td><strong>Deep space navigation and highly stable clocks</strong></td>
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<td><strong>Extreme precision formation flying for science observations and rendezvous</strong></td>
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<td><strong>High precision space-borne systems in optical to sub millimeter domain including interferometry</strong></td>
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<td><strong>Specialized active sensors for mapping and positioning (SAR, altimeters, GPS, ...)</strong></td>
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*Image: JPL Leadership Technology: The 2019 JPL Industry Briefing*
Industry Partnership Strategies

- Technology Affiliates Program
- Strategic Alliances/Technology Cooperation Agreements/Teaming Agreements
  - Joint Development with Industry
  - Joint Proposal Submissions
- Small Business Innovation Research
- Technology Dissemination
- Patents and Licenses
  - Caltech
  - NASA
  - Companies
- NASA Funded Research
- Small Business Technology Transfer
- Advanced Technology Program
- JPL As A Collaborator on Company-Led Proposals
- JPL Spin-off Companies
  - Photobit, Hightower, ViaSpace, Oakgrove
JPL As Your Technology Partner

- Broad range of technological expertise
  - Less than 10% of the NASA budget
  - More than 30% of NASA's new technologies
- Extensive intellectual property portfolio
- Strong link with Caltech and top universities
  - Agreements with Stanford Univ., Univ. Of Michigan, Univ. of Arizona, Arizona State Univ.
- Exceptional team of R&D personnel
- Diverse facilities for R&D functions
- Proven ability to work collaboratively with industry