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Five aerospace teams are vying for up to \$14 billion in NASA contracts to boost the amount of cargo delivered to and from the International Space Station.

by Debra Werner

PREDICT TROUBLE; AVOID TROUBLE

Airliners are safe but expensive to maintain. One way to put a dent in those costs would be to know in advance which parts are likely to require maintenance — and when. by Henry Canaday

AIRBUS VS. BOEING: WHOSE AUTOMATION PHILOSOPHY IS BEST?

Airbus and Boeing each uses automation to make flying safer and easier. But the world's two dominant manufacturers of large passenger jets have different ideas about how computers and pilots should interact. by Clint R. Baloq

ALL-SEEING AIRCRAFT

Before aircraft can fly without pilots at the controls, they'll need to be equipped with sensors and computers capable of performing like the human eyes and brain.

by Keith Button

TRUST: 3-D MANUFACTURING'S HOLY GRAIL

Additively made parts are being incorporated into spacecraft, but engineers are cautious about using the technique for propellant tanks on vehicles that must carry people or expensive scientific equipment. by Henry Kenyon

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ON THE COVER

The five cargo vehicles competing for the \$14 billion NASA contract (clockwise from top left): Cygnus (Orbital ATK); Dream Chaser (Sierra Nevada Corporation); Jupiter and Exoliner (Lockheed Martin); Dragon (SpaceX); CST-100 (Boeing)





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