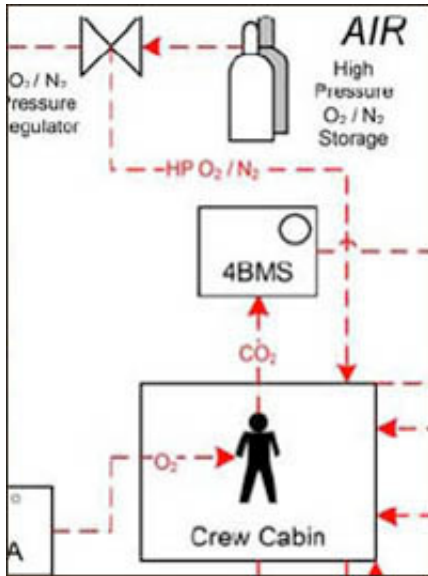


# Mars journey: Unsolved technical problems

2 October 2006



Life support system for Mars transit vehicle (partial).



In two new papers, Donald Rapp, formerly with NASA's Jet Propulsion Laboratory, reviews the current state of our understanding of life support and radiation safety and concludes that significant additional research will be required before safe and affordable human missions to Mars can become a reality.

Rapp reviews the current state of the understanding of life support for human missions to Mars and concludes current plans for life support contain optimistic assumptions regarding the degree of recycling and reliability that can be achieved and the amount of mass that life support systems may require.

In his second paper, he compares and contrasts the levels of radiation shielding required for human missions to the moon and Mars and finds currently planned missions to both bodies are not without potentially serious radiation risks.

Both papers are published in the current issue of *The Mars Journal*, a peer reviewed, open-access journal focused on Mars science, exploration and policy.

The two papers can be downloaded at:

- [marsjournal.org/contents/2006/0004](http://marsjournal.org/contents/2006/0004)
- [marsjournal.org/contents/2006/0005](http://marsjournal.org/contents/2006/0005)

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A U.S. scientist says human missions to Mars face technical challenges well beyond those faced during the exploration of the moon.

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