



DIVISION OF  
CORPORATION FINANCE  
Mail Stop 3720

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

May 17, 2010

via U.S. Mail and facsimile

Mr. David W. Thompson  
Chairman of the Board and CEO  
Orbital Sciences Corporation  
21839 Atlantic Boulevard  
Dulles, VA 20166

**Re: Orbital Sciences Corporation**  
**Form 10-K for the fiscal year ended December 31, 2009**  
**Filed: February 26, 2010**  
**File No. 1-14279**

Dear Mr. Thompson:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In one of our comments, we ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Definitive Proxy Statement filed March 9, 2010

1. We note that you have not included any disclosure in response to Item 402(s) of Regulation S-K. Please advise us of the basis for your conclusion that disclosure is not necessary and describe the process you undertook to reach that conclusion.

Board Leadership Structure, page 9 of the Proxy Statement

2. We note your disclosure related to the board's leadership structure and risk oversight in response to Item 407(h) of Regulation S-K. In future filings, please also discuss

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the effect that the board's role in the risk oversight of the company has on the board's leadership structure.

\* \* \* \*

Please contact Jay Knight, Attorney-Advisor, at (202) 551-3370, Robert Bartelmes, Senior Financial Analyst, at (202) 551-3354, or me at (202) 551-3810 with any questions.

Sincerely,

/s/ Robert Bartelmes

for Larry Spigel  
Assistant Director