Quarterly Progress Report

Title:
Dynamics of arctic mesosphere, thermosphere and ionosphere and relations to stratospheric and magnetospheric disturbances

Contract No. 9F007–5–8006/01-SR

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1 Contractual Issues

1. The project is on schedule. Four months worth of work are reported here (July 1 to October 31, 1996).

2. The project is within budget.

3. The project is free of any areas of concern in which the assistance or guidance of Canada may be required.

4. During the month of July 1996, I was offered a tenure-track faculty position at the physics department, University of Saskatchewan. I also received an offer of employment in industry in my home country, Israel, and decided to accept the later.

5. During the months of July to September, 1996, these events were discussed with the CSA supervising scientist and the scientific authority of this contract. It was agreed that all contract-related work will end by October 31, 1996, and that an outstanding charge of publication fees to a manuscript describing scientific results from this contract will be honored provided it is claimed before the end of March 1997.

6. On September 30, 1996, I submitted my resignation from the position of Professional Research Associate at the University of Saskatchewan, effective October 31, 1996. I maintain an Adjunct Professor status at the same institution till at least year 2000.

2 Scientific Discussion

A modem and appropriate software were installed in the PC that controls the Monochromatic All-Sky Scanner (MASS) to allow for off-site supervision of operation and archiving of data. This scheme was tested and operated properly. MASS was re-installed at Park Site (52.2N, 107.1W) during August 1996. It operated properly and collected useful data with a sodium filter for a few days. The azimuth stepping motor failed at the end of August and a new one ordered. Minor comments from referees were received and addressed re. a manuscript that describes the instrument and its first results from the Feb-Mar 96 campaign. The paper was accepted for publication in *Applied Optics* on October 15, 1996.

A major goal of this contract was to address scientific frontiers regarding weather patterns of the arctic upper atmosphere. It is a pleasure to report that all the scientific discoveries made during this contract culminated in important and successful publications in refereed journals. In the last few months the following two papers, both a direct result of contract work, were accepted for publication:

1. A manuscript entitled *On Krassovsky's ratio of ter-diurnal hydroxyl oscillations in the winter polar mesopause* by I. Oznovich, R. L. Walterscheid, G.G. Sivjee, and D. J. McEwen was accepted for publication in *Planetary and Space Science* on September 18, 1996.

2. A manuscript entitled *Tidal oscillations of the arctic upper mesosphere and lower thermosphere in winter* by I. Oznovich, D. J. McEwen, G.G. Sivjee, and R. L. Walterscheid was accepted for publication in the *Journal of Geophysical Research* on November 11, 1996.