Welcome address

15th International Symposium on Earth Tides

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Introduction and Objective

It is an honour to be asked to address this 15th International Symposium on Earth Tides. It is to your credit that the Earth Tides Commission (ETC) of the International Association of Geodesy is a highly successful collaboration of national agencies, universities and research institutions representing over 24 nations. As someone who has been involved in many international collaborative efforts, it never ceases to amaze me, how much is done in these voluntary organizations.

A key objective of this meeting is to encourage dialog and further promote campaigns to develop, compare and calibrate instrumentation for earth tide observations, techniques of operation and data analysis procedures. So I encourage all of you to take advantage of this beautiful setting, establish a rapport with your fellow scientists and use this as a springboard for your future collective success.

I commend each of you and your organisations for your dedication to the ETC and welcome you to this Symposium.

My staff has prepared some detailed notes on the size of our country the importance of natural resources to Canada, and our department's role. I think that this is worth sharing with you.

Canada and the Federal Department of Natural Resources (NRCan)

Canada is the world's second-largest country, larger than the continent of Europe (excluding Russia), and covers six time zones. Yet only 33 million of us call this vast land home. Given this, it is not surprising that the natural resources sector is a very important part of the Canadian economy, amounting to over 12 percent of Canada's GDP. Nearly a million Canadians are directly involved in forestry, mining and energy.

Natural Resources Canada, also known as NRCan, is a Canadian federal government department specializing in the sustainable development and use of natural resources, energy, minerals and metals, forests and earth sciences. NRCan conducts leading-edge science and technology to provide Canadians with ideas, knowledge and technology. This helps us use our resources wisely, reduces costs, protects the environment and creates new products and services.

We build and maintain a national knowledge infrastructure of Canada's land and resources, so all Canadians can easily access the latest information about our landmass and our resources. International partnerships and exchanges such as these help NRCan meet its commitments related to natural resources, and keeps access open to Canadian and global markets for products, services and technology.

NRCan Support of Gravity Efforts

Gravity is one of the supporting sciences in our department and Canada has a long, successful history in gravity studies. Two years ago we commemorated the 100th Anniversary of the first precise gravity measurements performed by Canada. These were carried out by the Dominion Observatory which later established our Geodetic Survey Division.

The 1902 experiments and the early gravity apparatus marked the Canadian beginning of a series of scientific observations and formed the basis for the National Gravity Program. And the evolution has continued through generations of improved instrumentation, now relying on state-of the-art absolute gravity meters. The original equipment is now a part of our history and is preserved in the collection of the National Museum of Science and Technology here in Ottawa. And to tell you how old I am, some of the first systems I was involved in developing are also in that museum!

Geodetic Survey Division is located within the Canada Centre for Remote Sensing. Under the stewardship of Geodetic Survey, the Canadian National Gravity Program now forms an integral part of a modern spatial positioning framework for Canada, called the Canadian Spatial Reference System (CSRS). Gravity contributions to international gravity programs serve Canadian science and technology and ensure global consistency of national spatial reference standards.

The measurements support NRCan commitments towards the sustainable development of natural resources and contribute to other government priorities. For example, tools to generate sea level GPS heights along with data for vertical crustal motion and post-glacial rebound studies are used in addressing environmental issues as well as for economic development through contributing to identifying potential oil- and mineral-bearing regions.

But I think we need to do better to get our story out and ensure the lasting support our science deserves.

NRCan's Science that Serves Canadians

This meeting here is of particular importance as the micro-gravity community prepares to expand its expertise into environmental monitoring efforts. For NRCan this expertise could be applied to projects investigating effects related to climate change processes, to variations in groundwater storage, and to natural hazards such as crustal deformations found in seismic regions.

With Canada's vast territory, it is incumbent on us to take advantage of the opportunities presented by emerging technologies such as satellite systems. Remote sensing, for example, already helps us to manage our forests and our crops better and enables summer shipping through the ice packs of Arctic waters.

Many of you are getting involved with a new breed of remote sensing as satellite missions such as CHAMP, GRACE and the upcoming GOCE produce unprecedented coverage and accuracy for monitoring changes in gravity. All of this bodes well for our collaborative understanding of the Earth's systems as we all face unsettling changes in our natural environment.

Closing Remarks

If I leave you with only one message, it would be a challenge to do your utmost to help us all face the issues of today. Help us to focus our limited resources efficiently on understanding and mitigating the effects of climate change and natural hazards, on building strong and safe communities and developing healthy economies. Science is helping to take us there, but our collective choices along the way will influence our success.

I hope you have time to visit some of the sites around our beautiful capital city, take

in some of its capital attractions, such as the traditional Changing the Guard ceremony. If this is your first visit to our country, I hope that Ottawa will provide you with lasting memories of the quiet charm of Canada. We certainly extend a welcoming hand and look forward to seeing you in Canada in the future.

The local organizing committee is available to address any specific questions you may have about the city or your visit. Don't hesitate to ask for their help. Once again thank you and I hope you have a very productive meeting.