Physics for the Future: International Workshop on the Australian Gravitational Wave Detector

Gravitational Wave Observatory Development Committee

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An international workshop will take place at UWA from 27-29 September 2012 to discuss the international proposal to develop and construct a gravitational wave detector in Gingin, Western Australia. The detector would form part of an international gravitational wave detector array involving more than 1000 physicists around the world. The workshop is designed to bring policy makers, politicians, scientists and engineers together to discuss the project and to help formulate a roadmap for the $200M-scale project.

Background

On the 5th July an international meeting was held in Stockholm, chaired by Professor Federico Ferrini, Director of the European Gravitational Observatory (EGO) to discuss the international need for a detector in Australia. The meeting included representatives of the Australian Consortium for Gravitational Astronomy (ACIGA) and senior representatives of all the major ground based gravitational wave projects in USA, Europe and Japan.

At the meeting Professor David Blair from ACIGA gave a brief overview of the momentum developed in Australia in regard to the proposed gravitational wave observatory. He reported the activities of the Australian Gravitational Wave Observatory Development Committee that included the recommendation that the development of the Observatory required parallel engagement on State, National and International fronts. On the State front he reported the positive outcome of a recent assessment by the WA Innovation Co-Investment Program, while nationally, the project was included in the Australian Academy of Sciences Decadal Plan for Physics.

Professor Ferrini reported on discussions about EGO collaboration with Australia. He and other international leaders emphasised the strong scientific case for the observatory and the willingness of the international community to assist and participate in the development of the observatory which is required for testing fundamental aspects of Einstein's General Theory of Relativity.

High importance was expressed by all present at the Stockholm meeting on the need of the international community to help and participate in getting a detector in Australia. Many participants at the meeting stressed the intrinsic cooperative nature of the field and the importance of assisting Australia because the Australian detector contributed maximally to improving the entire detector array, increasing the certainty of detection, and greatly improving the science outcomes.

The need for a workshop/meeting in Australia was discussed. The purpose of the workshop would be to meet with representatives of local and national governments, the research community in Australia, the Australian industries that would take part in the construction of the detector and the industries that would benefit from the spin offs. Of particular importance would be to obtain advice from policy makers to help create a roadmap for development.

Workshop Details

An Italian and French delegation plus the chair of the international umbrella organisation (the Gravitational Wave International Committee representing more than 1000 physicists) and representatives from USA, Germany, China and Taiwan will attend the workshop on 27 September and on-site meetings at the Gingin site 28 - 29 September.

The *Physics for the Future* workshop is supported by the Italian and French Embassies in Australia and by ACIGA which represents five Go8 universities. One goal of the workshop is to finalise a letter of intent for international participation in the gravitational wave observatory project.

Discussions at the workshop will include discussion of the Australian technologies that would be used in a detector developed in Australia. EGO leaders emphasise that engagement with Australia could be beneficial to the next generation detectors because it will facilitate better access to CSIRO's exceptional expertise in optical polishing. Through the workshop the international community will be expressing its willingness to collaborate and pool expertise on the extraordinary innovations of gravitational wave technology, and to participate in the design, planning, validation and costing process for the detector.

The Gravitational Wave Observatory Development Committee believes that the present opportunity is of major significance to science and technology in Australia. By bringing Australia into the forefront of international fundamental physics and by sharing frontier technologies, it will benefit science, technology, education and industry in Australia. By leading to a very high visibility physics project it will bring in further international partners, inspire young people and allow Australia to reap the benefits of its key geographical position that dictates that the southern detector must be located on this continent. To move the project forward it is also very important that we receive appropriate advice at all levels - Regional, State, Australian Commonwealth and International - on aspects of the project including schedule, international agreements, industry benefits and innovations.

For the above reasons we are inviting politicians, policy makers, representatives of all levels of government, industry representatives, CSIRO, academic and education representatives and representatives of the engineering community to attend the briefing session and workshop on 27 September.

Registration: Please email Ruby Chan to confirm attendance at the workshop.

Location and Time: The workshop will take place in the Ross Theatre, School of Physics, UWA. Coffee at 8.15 for 8.30 start.

Parking: Contact Ruby to arrange for a parking permit. The meeting will take place during a non-teaching period. Parking should be easily available.

Workshop Program: The workshop will start with a 40-minute *Executive Briefing*. Short *snapshot talks* will present some of the benefits of the GWO at the regional and national level. International speakers will discuss innovations arising from gravitational wave research, and policy makers will be asked to contribute to dicussions aimed to defining a roadmap for the GWO development. The final program will be sent out soon.

Please feel free to pass this invitation to appropriate colleagues.

Official opening: The Minister for Science Chris Evans has been invited to open the workshop and the Shadow Minister for Innovation and Science Sophie Mirabella has been invited to give a short address.

Organising Committee

Adj Prof Howard Golden (Rio Tinto), Chair, Gravitational Wave Observatory Development Committee
Mr Jens Balkau, (Regis Resources) Co-chair, Gravitational Wave Observatory Development Committee
Prof Oscar Moze Science Attache, Italian Embassy, Canberra
Hon Philip Gardiner MLC. Member for the Agricultural Region
Hon Grant Woodhams, MLA, Speaker, Legislative Assembly
Prof Jesper Munch, Chair, Australian Consortium for Gravitational Astronomy
Prof David Blair, Director Australian International Gravitational Research Centre.
Prof David McClelland, Director, Centre for Gravitational Physics, ANU