

## **REVIEW OF THE INTERNATIONAL ASTRONOMICAL UNION (IAU)**

### **OFFICE OF ASTRONOMY FOR DEVELOPMENT (OAD)**

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## REVIEW OF THE IAU OFFICE OF ASTRONOMY FOR DEVELOPMENT

### 1. Executive Summary

- 1.1 The Office of Astronomy for Development ('OAD') was set up as an equal joint partnership by the IAU and NRF in 2010 to implement the IAU decadal Strategic Plan, Astronomy for Development: 2010 – 2020, with offices at the SAAO in Cape Town and Kevin Govender as Director. Although it is based in Cape Town, it has a global remit.
- 1.2 Since then its performance has been outstanding, particularly given the very limited resources that have been made available to an organisation with such ambitious terms of reference. In particular, apart from setting up from scratch its administrative structures and four regional nodes (with another two close behind), it has set up three task forces, overseen allocation of 68 developmental projects, and hosted 5 international workshops and meetings.
- 1.3 We strongly recommend continuation of the OAD as a joint project of the IAU and NRF for a further 5 years plus an additional year so the contract is synchronised with the IAU General Assemblies, based at the SAAO in Cape Town, and with Kevin Govender continuing as Director.
- 1.4 We furthermore recommend that the IAU make clear its intention to continue the OAD beyond the period of the 10 year plan currently in place through an appropriate resolution to the General Assembly. Whether this would imply continuation in Cape Town would be dependent on further assessment of the project closer to that time.
- 1.5 We recommend a modest increase in funding for the OAD to enable its work to expand to better match the needs. Specifically we recommend two appointments: one of a PhD level astronomer to link with the task forces; and one a part time fundraiser. In the longer term we can envisage further expansion of the OAD but we note that it is essential to control scope to remain within budget. We suggest that opportunities for funding outside of the current models also be considered. For example additional funding from NRF and/or DST could be used to augment IAU grant funding for African proposals. We recommend that the IAU appoint and finance the part time fundraiser specifically to raise funds for the OAD office and its programmes, which are greatly oversubscribed. This person preferably to be located in Europe/North America, and to utilize the exceptional presentational skills of the director of OAD. The IAU executive to monitor the success of this activity.
- 1.6 The current structures are complicated and result in confusion. Reporting lines need clarification and improved terms of reference are needed for several bodies (OAD, EDOC, and the Steering Committee). Noting that both IAU and NRF have changed structure since the original agreement, any agreement for a future period must take account of these changes. To ensure continuity, the IAU and NRF Executives should in the immediate future agree to continuation of the present Steering Committee until the end of the year, when the current agreement runs out. As OAD matures the role of the Steering Committee must adjust with the committee standing back a bit more and offering objective constructive criticism. The quality of guidance needed and the gravitas of the role of the steering committee will grow.
- 1.7 The work of the OAD in this next period should be focused on consolidating the initiatives currently under way. It should engage critically in the debate on the relation between astronomy for development and development of astronomy, while developing its work globally.
- 1.8 This is an equal joint agreement between IAU and NRF and we recommend an annual high level meeting between the IAU president and General Secretary and the NRF CEO and Deputy CEO:

Astronomy in order to ensure clear communications of any changes and for resolution of any differences which will naturally arise over time.

- 1.9 There is a difficulty getting visas for OAD staff to work in South Africa, which prevents staff appointed from overseas taking up their positions and getting on with their work. We strongly recommend that the DST and the Minister be requested to urgently petition the relevant Department to make issuing of visas faster and easier so that this ceases to be a considerable impediment to the excellent work of the OAD.

## 2. Background to the review

The mission of the OAD is to implement the IAU decadal Strategic Plan, Astronomy for Development: 2010 – 2020: [http://www.iau.org/education/strategic\\_plan/](http://www.iau.org/education/strategic_plan/). It has links with fundamental science, cutting edge technology and deep culture – three pillars of a developed society. This Plan, which was developed as a follow-up to the successful International Year of Astronomy 2009, is an ambitious blueprint for exploiting astronomy as a tool for global development and education.

The huge success of the IAU-sponsored and UN- approved International Year of Astronomy (IYA) 2009, which commemorates 400 years since Galileo first turned a telescope to the sky to make fundamental discoveries that changed people's perceptions of the Universe, has motivated the IAU to commit to even more ambitious programmes of educating the world to the beauty of the Universe and the sense of common humanity that derives from it. At the General Assembly in Rio de Janeiro in August 2009 the Union approved this strategic plan for education and development, which was formulated during the previous two years. It proposes a range of programmes that will stimulate the development of a generation of youth who will become the science and technology leaders of their countries in future years.

Astronomy is a unique and cost-effective tool for furthering sustainable global development, because of its technological scientific and cultural dimensions. This plan shows how astronomy can contribute globally to education at the primary, secondary and tertiary levels and can enable less developed, poorer countries to participate in cutting-edge scientific research. Stimulating astronomy education and development throughout the world is one of the most important missions of the International Astronomical Union.

During the current decade the IAU intends to expand its role in furthering the use of astronomy at all levels in developing countries, working closely with relevant external organizations and using the International Year of Astronomy in 2009 as a springboard. The vast reservoir of talent presently active in astronomy and related technology throughout the world will be exploited and mobilized to further sustainable global development.

The Office of Astronomy for Development ('OAD') <http://www.astro4dev.org/> was set up jointly as an equal joint partnership by the IAU and NRF in 2010 to implement the IAU decadal Strategic Plan, Astronomy for Development: 2010 – 2020, with offices at the SAAO in Cape Town and Kevin Govender as Director. Although it is based in Cape Town, it has a global remit.

*OAD is the lead organization in the worldwide implementation of the IAU "Astronomy for the Developing World" Strategic Plan 2010-2020 with tasks as outlined in Section 4.1 of that Plan. It will provide the global coordination needed for an integrated strategic approach and in addition will be expected to initiate and develop new programmes consistent with the goals of the Strategic Plan.*

### 3. The Developmental Context

The OAD operates in a difficult developmental context that means it faces a series of conundra. Inter alia, these are

***1. Astronomy for development, or development of astronomy.***

The OAD has been given both to deal with: which should be its priority? In terms of the development plan, the main aim is astronomy for development; but using astronomy in this way cannot be achieved without a viable astronomical community, hence the need for development of astronomy in some countries. It can be argued that in places with little previous astronomy activity, the development of astronomy has to occur before astronomy for development can take place but since different regions will be in different development phases the Regional Nodes are in the best position to make this judgement. The OAD are well aware of the need and complexity of achieving this balance.

***2. Focus on least developed (Africa), mainly less developed, or all***

The need is greatest in the least developed astronomical region, which is Africa; but the IAU is an international body with worldwide membership, while South Africa, and hence the NRF, sees its role primarily in Africa rather than other areas. The OAD must spread its efforts across them all, but with an emphasis on Africa to some degree.

***3. Given very few resources, what is the priority? How to go to scale – make it take off?***

Focus on fewer attainable projects: don't try to do everything. The idea is to try out innovative ideas in specific areas, e.g. South Africa, and then promote their use worldwide. To do so one needs both to pursue long term well thought out agendas but also meet local needs that come up in a flexible way. The aim is to be at 2018 IAU GA with good ideas that will realise astronomy for development ambition and propose projects that can be rolled out and have broad impact.

***5. How to make both partners feel equal in implementation?*** The project is an equal one between the IAU and the NRF; both partners need to feel they are getting value for money and effort in a worthwhile partnership. This can be achieved because both wish to use their resources to help achieve development through astronomy and each can bring different resources to the project.

***6. How to increase funding, and use activities to leverage further funding?*** –Because of limits to resources the IAU and NRF can provide, projects will need external funding and all plausible sources need to be explored. This includes international organisations such as ICTP, TWAS; national astronomical organisations such as RAS, AAS; and South African sources such as DST.

***7. How to handle developmental issues and cultural sensitivities***

Some regions have many social, economic, and political issues that make effective work in those areas particularly difficult. Furthermore there are cultural and religious sensitivities that have to be handled with the greatest of care.

In presenting astronomy to general audiences, one should firstly be clear what material is well tested astronomy or cosmology, and what is scientifically based but untested speculation; and secondly, distinguish scientific discoveries about the universe from philosophical speculations about the cosmos that may to some degree be based in that science, but are not in fact testable scientific theories. . The Director (OAD) and current Chair of the SC are well aware of these issues. We are confident they will be handled with care.

### 4. Evaluation questions that were addressed

The stated purpose of the review was to:

- review the performance of the OAD against its objectives within its resources during the period April 2011 to 31 March 2014;
- examine the IAU/NRF agreement with a view to its possible enhancement should the Agreement be renewed;
- assess whether the continuation of the OAD in South Africa would be desirable or not;
- make recommendations/suggestions to optimise the future development of the OAD.

The panel is requested to assess the overall performance of the OAD in terms of the envisaged tasks as stipulated in the 2012 update of the Strategic Plan.

## 5. Findings

**Major Finding 1:** Since its establishment, OAD performance has been outstanding, particularly given the very limited resources that have been made available to an organisation with such ambitious terms of reference. In particular, apart from setting up from scratch its administrative structures, it has set up three task forces and four regional nodes (with another two close behind), overseen allocation of 68 developmental projects, and hosted 5 international workshops and meetings. This is a major success in a context where, as one interviewee told us, the international scene is littered with the carcasses of attempts to create similar developmental bodies by international organisations affiliated to ICSU.

**Major Finding 2:** The agreement between the IAU and the NRF should be renewed, with some amendments as below.

### SUCSESSES:

We note the following achievements in particular:

A: Successful establishment of infrastructure and tools to communicate with an associated large global network of project proposers.

B: Successful establishment of 3 AfD Task Forces (TFs) covering (i) Universities and Research, (ii) Children and Schools and (iii) Public Outreach.

These have resulted in many good projects. Examples are,

**Task Force 1:** Joint Exchange Development Initiative for Africa

See <http://www.astro4dev.org/blog/category/tf1/jedi-2014/>  
<http://www.astro4dev.org/blog/category/sub-saharan-africa/>

**Task Force 2:**

For its global reach, Astronomical kit for the visually impaired:

<http://www.astro4dev.org/blog/category/tf2/visually-impaired/>

For its local reach: Mathare Ambassadors of Astronomy

<http://www.astro4dev.org/blog/category/tf2/kenya-ambassadors/>

**Task Force 3:**

Low bandwidth Zooniverse:  
<https://www.zooniverse.org>

C: Successful establishment of 4 OAD Regional Nodes (East Asia, South East Asia, East Africa, Southern Africa), with 2 additional ones approved more recently (West Africa, Andean South America) and others in the planning stage. The aim is to achieve global coverage: this is well under way.

D: Successful recruitment of over 550 OAD volunteers

This has happened, however by and large they have not yet been used well (see below).

E: Successful Stewardship of the IAU development and education activities with the institution of an annual (highly oversubscribed) global call for proposals in each of the 3 Task Force sectors and coordination and management of the selection procedures.

42 projects have been selected by the TFs and approved by the IAU Extended Development Oversight Committee over the first 2 years. OAD has undertaken successful management and monitoring of their contracts and financial reporting. Monitoring of outcomes is due to start soon with the appointment of a new staff member.

This programme has been restricted by available funds however it has leveraged significant amounts of additional funding. Furthermore the Task Forces have also been used to endorse projects which have then obtained independent funding. The cachet of the IAU has been crucial here.

*ISSUES:*

#### **A: Activity issues**

1. **The task forces** carry a heavy evaluation load, and have indicated to us they would also like a more creative role. As evaluation takes place only for restricted time periods each year, we encourage the OAD to work with them in developing other roles.
2. **Regional issues:** there has been criticism that the work is too much centred in Africa. The OAD staff are well aware of this issue, and that the remit of the OAD is global. There are two further issues here. Firstly, as is made very clear in the IAU decadal Strategic Plan, Africa lags behind the rest of the world in terms of astronomical development and so to some degree deserves special attention. Second, the OAD director explained that one possibility is to test ideas in Africa first, and then roll them out in other areas.
3. **Volunteers:** although they have been registered, there have been inadequate resources to take full advantage of them. This is the one part of the programme that has not been successful.

We note that the utilization of this resource is complex in that they would have to check and assesses the appropriate qualities given cultural sensitivities, and there may even be personal privacy issues if the data base became public. Meanwhile some disillusionment is inevitable.

4. **South African benefits?** We have heard criticism that this project does not benefit South Africa. However although it does not directly run South African programmes, it is beneficial within the South African context in a number of ways.

The Director has made the following comments in this regard: The OAD is positioned to serve the South African HCD, education and outreach goals by acting as an interface between global best practice and local implementing organisations. The close relationship of the OAD with the SAAO and various other South African education and outreach implementing

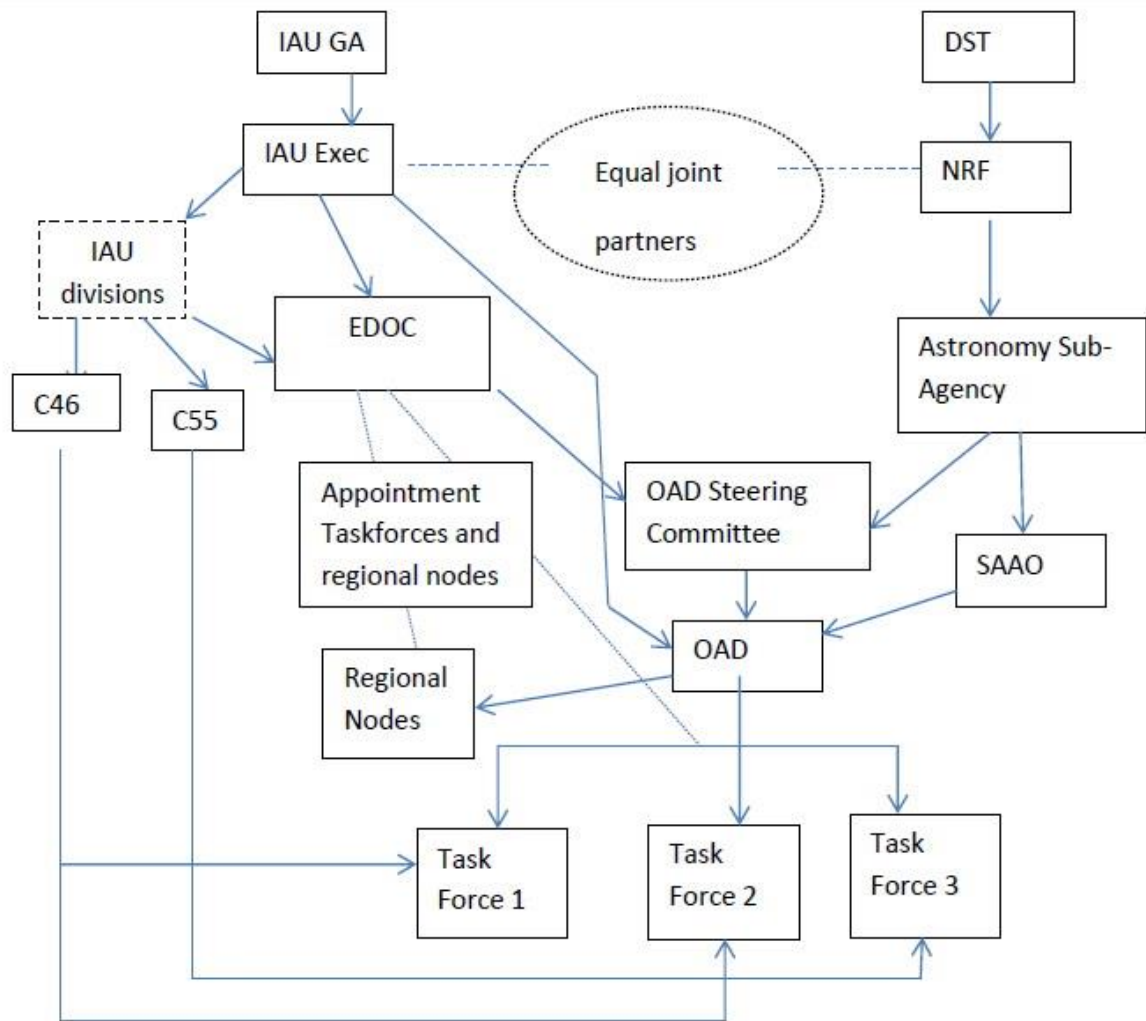
organisations (such as Scifest Africa, Iziko Planetarium, several science centres, etc.) allows for the free flow of international experience and resources from the many OAD activities around the world into the South African education and outreach landscape. The location of the OAD in South Africa also allows for visitors to the OAD (during conferences, workshops, collaborations, etc.) to participate in local activities e.g. OAD visiting fellow Wanda Diaz worked closely with SAAO to reach out to local schools for the blind. An example of international resources/experience coming into South Africa is the introduction of astronomy at the University of Zululand, who purchased their own small telescope based on the activities provided by the OAD with the support of the Task Force on Universities and Research. From the OAD's global perspective, the diverse contexts available in South Africa provide an ideal testing ground for innovative ideas which could then be rolled out to other parts of the world.

5. **Relation to the SKA:** We are well aware that the International SKA project has played a very significant role as a real world example of astronomical technology being used to develop technology in the African continent. While it is inappropriate for the IAU to be directly involved in supporting any specific facility it is clear that this activity could feed into the technology for development aspects of the IAU Strategic plan and its implementation by the OAD.

## **B: Structural Issues**

- The agreement envisages an **equal partnership** between the IAU and the NRF. This is sometimes perceived as being equal financial inputs (modulo exchange rate fluctuations) but perhaps is better seen as being a partnership where both parties have an equal stake in the success of the project. While most were aware of this, not all the people we spoke to were aware that this was an equal joint partnership.
- We could find no **organisational chart** showing how various bodies related to the OAD and the Steering Committee. The attached chart is our best effort at articulating this. We suspect there are several different understandings of some of the relationships. This complexity and confusion is markedly affecting communications and is in part responsible for some friction. As OAD activities mature it becomes even more important that these issues are clarified. We recommend urgent action to simplify structures, establish terms of reference and clarify reporting lines. Some asymmetry is inevitable because the IAU is a membership organisation and the NRF is quasi-governmental organisation.





The structure around the Steering Committee is particularly important. Having clarity on the following issues would greatly improve interactions and perceptions of the OAD:

**a) Steering Committee membership:** we understand that NRF and IAU each appoint three members (who are not there as representatives of their appointing bodies). One of the NRF appointees and one of the IAU appointees are appointed as Chair/Vice Chair and alternate these roles. . We strongly endorse the suggestion that the IAU Assistant General Secretary should be an ex officio member of the Steering Committee and note that the NRF should also add an ex-officio member. The current membership of the Steering Committee were all appointed at the same time on the same term of office and are reaching their end of term. A succession plan is urgently needed. We agree with the proposal from the current OAD steering committee that SC appointments should be synchronised with the IAU GAs and that appointments should be staggered to maintain continuity..

**b) Terms of reference:** We are not aware of ToR for the Steering Committee. Terms of reference should spell out fully how the membership is appointed, what the reporting duties of the Committee are, its relationship to NRF and IAU. The agreement has insufficient detail about the Steering Committee. We note that the Director SAAO sits in on Steering Committee meetings, and so can give strategic advice; this also should be included in the ToR.

**c) Role of the Steering Committee:** The direct and strong support provided by the Steering Committee to the OAD in its start-up phase has been very important but as OAD matures the role of the Steering Committee must adapt with the committee standing back a bit more and offering



objective constructive criticism. The quality of guidance needed and the gravitas of the role of the steering committee will grow

**d) Reporting:** The OAD SC should report formally to both the IAU and the NRF. In organizations such as the IAU with continually rotating officers such written records preserve corporate memory. Currently the Director OAD provides quarterly reports and annual performance plans and annual performance reports to NRF via SAAO as part of the legal accountability requirements. These are necessarily bureaucratic and NRF specific. They are copied to IAU after SAAO approval. However the Director OAD should also provide an annual strategic report to the IAU with a focus on the 1 activities of relevance to the international astronomical community.

### **C. Organisation and Finance Issues**

**Staffing:** In a start-up period it inevitably takes time to build up the full staff complement. The average level of staffing over the period of this review has been 2.25 full-time-equivalent people (out of a possible 3.0). Several factors have contributed to this; the one that endures is the delay in getting visas for foreign staff members. This delay does not show South Africa in a good light to the international scientific community. The SAAO human resources office has provided good support.

**Finance for the Office.** Finance for the office comes from the NRF, plus some from the IAU, and it is this finance that limits the size of the office. We argue elsewhere for an increase in the size of the office to capitalise on developments already successfully started.

**Finance for Projects.** The funding for projects recommended by the Task Forces and approved by EDOC, comes from the IAU (in Euros) to SAAO (Rands). The projects can be anywhere in the world, so the funds then get disbursed in the relevant local currencies. The SAAO handles these transactions under NRF regulations. These regulations are focussed on South Africa and there can be challenges for OAD in terms of policy compliance. We judge that acceptable work-arounds have been devised, but that these add extra work for both SAAO and the OAD staff. Clearly also there are problems caused by exchange rate fluctuations. There has been talk of an IAU Euros Bank Account specially for these funds to eliminate the transfer of funds into and then out of Rands. This suggestion has not been investigated by the review panel. There is an enormous oversubscription rate for the projects and clearly additional funding would be very well used.

### **D: Dimensions of the Review.**

The TOR for our review requested that we assess the following questions (Items 7.1 – 7.10 in the ToR). While conducting this review we realised that many of these questions were based on a version of the IAU Strategic Plan that is no longer applicable, even though they are incorporated in the IAU-NRF agreement. While we will provide responses to these particular questions we felt it necessary to significantly expand the issues to be covered.

#### *7.1 Management, coordination and evaluation of the IAU Programmes in the area of development and education.*

Some of these programmes have successfully been taken over by the OAD which has already achieved a lot. Others are done through other bodies such as OAO in Japan, International School for Young Astronomers (IYSA), which we have not been asked to review.

#### *7.2 Organisation of oversight of the IAU development [activities] programmes and the establishment of their annual budgets.*

Organisation of the oversight of the OAO, ISYA, OAD and relevant commissions is not co-ordinated by OAD.

7.3 *Liaison with the chairs of the various Commission 46 Programme Groups/ Commission 55/sector task forces in planning and implementing the relevant programmes.*

The structure has changed so much this question is no longer applicable.

7.4 *Liaison with the IAU regional coordinators and IAU regional nodes in planning and implementing the relevant programmes.*

The Regional Node programme is recently developed and is only partially established. There has been a recent face-to-face meeting between OAD staff and the new Regional Co-ordinators which was found to be stimulating. They plan to hold similar meetings every 18 months.

7.5 *Provision of administrative support for IAU programmes in development and education.*

Administration through the agreement with SAAO seems to be working well, but with such a limited OAD staff (2.25 FTE average over the reporting period) we are clear more OAD positions are needed.

7.6 *Establishment of the new IAU endowed lectureship programme:*

This has not yet happened. We are clear that it is for the IAU to establish this programme and that the OAD could provide expert regional advice once it is established.

7.7 *Stimulation of communication on IAU development matters between members and associated members through the maintenance of an IAU website for development and education and appropriate forums.*

The website (<http://www.astro4dev.org/>) is functional and being used. Since April 2013 (the only period for which data has been collected) there have been 25k new users from 188 countries. 60% of the hits are new users, 40% returners. The average visit is 3.5 minutes long, viewing 2.5 pages. 45% of all visitors view more than one page. We recommend that OAD activities should be promoted by the IAU whenever possible, e.g. web links, newsletters, presentations at IAU events.

7.8 *Provision of information for astronomers in all developing countries about IAU programmes.*

We believe this refers to work done by OAO not OAD, although the OAD mailing list is on occasion used..

7.9 *Proactive coordination and initiation of fundraising activities for astronomy development.*

In the agreement, this is an IAU responsibility (section V.2), assisted by the NRF (section IV.5). Therefore in terms of the agreement this is not primarily an OAD function.

7.10 *Management of OAD in terms of:*

- *leadership;*

- There has been excellent leadership by the Director OAD, who is a charismatic leader, full of energy and who crucially understands the cultural issues as well as developmental issues.

- *staffing;*

- There has been a glitch in staffing of the OAD, but this has now been fixed. All involved in this have learnt from the experience.

- *commitment of institution hosting the OAD;*
  - This is high: they have been very supportive.
- *location of the OAD;*
  - the location of the OAD has turned out to be good. It has worked well.
- *funding;*
  - Funding is inadequate, both for the OAD itself and particularly for projects. Increasing funding must be a major aim of the participating partners in the future.
- *strategic positioning of the OAD and future plans.*
  - This is very good. The Director has an excellent sense of strategy, and so has the Chair of the Steering Committee. They work together very well on these issues.

## 6. Recommendations

**Overall**, the project has had a remarkably successful beginning. Both the IAU and NRF should continue in this successful partnership that benefits both organisations and leverages their separate strengths for developmental purposes. It benefits astronomers in many countries, and helps set in motion the successful use of astronomy for development in an imaginative and energetic way.

Our recommendations are as follows.

*1. We strongly recommend continuation of the OAD as a joint project of the IAU and NRF for a further 5 years plus an additional year so the contract is synchronised with the IAU General Assemblies, based at the SAAO in Cape Town, and with Kevin Govender continuing as Director.*

The initial joint agreement between IAU and the NRF was set up when the OAD office was first established. We now have a successful OAD hosted by NRF and the need for a renewed agreement also provides the opportunity to update the agreement correcting some minor deficiencies and allowing for structural changes at NRF (astronomy sub-agency) and IAU (EDOC) which have occurred since the original agreement was written. A new agreement will be needed by the end of 2015 so we strongly encourage IAU and NRF to start this process before the IAU GA in Hawaii in August this year. We suggest that the incoming IAU officers lead the renegotiation since they will have the responsibility for executing this agreement after the GA.

**Motivation for this recommendation.** : Comments we have heard about the work of the OAD include: ‘done exceptionally well’; ‘amazing they have managed to do as much as they have’. ‘Much better now than thru the old Commissions.’ ‘Remarkable – climbed a steep hill!’ ‘Remarkable achievement.’ All this has been done with an average of 2.25 FTEs.

*2. We furthermore recommend that the IAU make clear its intention to continue the OAD beyond the period of the 10 year plan currently in place through an appropriate resolution to the General Assembly. Whether this would imply continuation in Cape Town would be dependent on future assessment of the project.*

**Motivation for recommendation.** We discovered that some members of the Steering Committee and the Director have been working on the assumption that the programme would close in five years' time with the completion of the IAU decadal strategic plan. IAU has a long history of supporting education and development programmes so we assume that termination of this programme after 10 years was never the intention of the IAU.

- 3. We recommend a modest increase in funding for the OAD to enable its work to expand to better match the needs. Specifically we recommend two appointments: of a PhD level astronomer to link with the task forces; and a part time fundraiser. In the longer term we can envisage further expansion of the OAD but we also note that it is essential to also control scope to remain within budget. We suggest that opportunities for funding outside of the current models also be considered. For example additional funding from NRF and/or DST could be used to augment IAU grant funding for African proposals. We recommend that the IAU appoint and finance the part time fundraiser specifically to raise funds for the OAD office and its programmes which are greatly oversubscribed. This person preferably to be located in Europe/North America, and to utilize the exceptional presentational skills of the director of OAD. The IAU executive to monitor the success of this activity.*

**Motivation for recommendation:** funding is manifestly inadequate. It is key to the future that more funding be found for the OAD itself and for the projects. This might result in a funding asymmetry between the IAU and NRF, but the two partners would continue to have equal stakes in its success.

- 4. The current structures are complicated and result in confusion. Reporting lines need clarification and improved terms of reference are needed for several bodies (OAD, EDOC, and the Steering Committee). Noting that both IAU and NRF have changed structure since the original agreement, any agreement for a future period must take account of these changes. To ensure continuity, the IAU and NRF Executives should agree to continuation of the present Steering Committee until the end of the year, when the current agreement runs out. As OAD matures the role of the Steering Committee must adjust with the committee standing back a bit more and offering objective constructive criticism. The quality of guidance needed and the gravitas of the role of the steering committee will grow.*

**Motivation for recommendation:** as indicated above in this document, the structure is very complex and reporting procedures are not working well. It is important this be resolved.

- 5. The work of the OAD in this next period should be focused on consolidating the initiatives currently under way. It should engage critically in the debate on the relation between astronomy for development and development of astronomy, while developing its work globally.*

**Motivation for recommendation:** the OAD has very many issues it could tackle but has limited resources. It must focus these resources where they will bring the greatest benefit. The Director of the OAD and the Chair of the SC are well aware of these issues.

- 6. This is an equal joint agreement between IAU and NRF and we recommend an annual high level meeting between the IAU president and General Secretary and the NRF CEO and Deputy CEO:astronomy in order to ensure clear communications of any changes and for resolution of any differences which will naturally arise over time.*

**Motivation for this recommendation:** In the current structure there have been some communication failures and some unresolved disagreements. This will also ensure that the concept of an equal partnership is respected.

7. *There is a difficulty getting visas for OAD staff to work in South Africa, which prevents staff appointed from overseas taking up their positions and getting on with their work. We strongly recommend that the DST and the Minister be requested to urgently petition the relevant Department to make issuing of visas faster and easier so that this ceases to be a considerable impediment to the excellent work of the OAD.*

**Motivation for this recommendation:** We are at present unable to employ excellent staff who have been selected to work at OAD because of these visa problems.

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**Signed by the Review Panel Members**

- Dame Jocelyn Bell Burnell, University of Oxford, United Kingdom (co-chair)

*S. Jocelyn Bell Burnell* 19/02/2015

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- Prof Ron Ekers, CSIRO/Australia Telescope National Facility, Australia

*Ron Ekers* 20/02/2015

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- Prof George Ellis, University of Cape Town, South Africa (co-chair)

*George Ellis* 18/02/2015

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**Annexure 1:**

**TERMS OF REFERENCE OF REVIEW PANEL**

**REVIEW OF THE  
INTERNATIONAL ASTRONOMICAL UNION (IAU)  
OFFICE OF ASTRONOMY FOR DEVELOPMENT (OAD)**

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**1. Assignment title**

Review of the IAU Office of Astronomy for Development (OAD).

**2. Background**

The International Astronomical Union (IAU) reached an agreement with the South African National Research Foundation (NRF) in July 2010 concerning the hosting of the OAD (hereinafter “Agreement”). The OAD is the lead organization in the worldwide implementation of the IAU Strategic Plan 2010–2020 “Astronomy for the Developing World - Building from IYA2009”. The plan includes a vision, specific goals for the decade, a strategy for attaining them and a detailed blueprint for their implementation. As part of this implementation, the IAU OAD was launched at the South African Astronomical Observatory (SAAO) in Cape Town, South Africa, in April 2011. The OAD provides the global coordination needed for an integrated strategic approach and will also be expected to develop new programmes consistent with the goals of the Strategic Plan.

In terms of the agreement between the IAU and the NRF, independent reviews of the performance of the OAD are to take place at intervals of not less than two years and not more than four years. The initial agreement covers five years of support until 31 December 2015 with the understanding that further terms would be considered.

**3. Assignment Principal**

The Assignment Principal (AP) is the NRF represented by the Deputy CEO: Astronomy.

The role of the AP will be to:

- approve the terms of reference (ToR);
- approve the budget;
- approve the members of the review panel in consultation with IAU as per Agreement XVI,1 and the NRF Executive;
- approve the review plan and time frame for the review process;
- consider and suggest suitable interviewees for the review panel;
- attend the verbal feedback session of the review panel;
- ensure that the review report addresses the ToR;
- accept the final report by the review panel;
- accept the response of the management of the OAD to the report.

**4. Service provider**

The Reviews and Evaluation (RE) Directorate of the NRF will act as the service provider to manage the review process. Its responsibilities will be to:

- develop the ToR for the review in consultation with IAU as per Agreement XVI,1 and the NRF Executive;
- prepare letters of invitation for the approved members of the review panel for the AP's signature and distribution;
- develop a programme for the review, including a budget;
- coordinate and manage the entire review process, including logistics;
- provide support to the review panel;
- source the necessary documents stipulated in the Appendix with the help of the staff of the OAD and make them available to the review panel six weeks prior to the commencement of the review in South Africa;
- receive the final report by the review panel and submit it to the AP for acceptance;
- solicit the response from the management of the OAD for circulation to the AP for acceptance;
- forward the final report and management response to the IAU Executive Committee and NRF Executive for action;
- place the final review report and the Management response on the NRF website within one month of the acceptance of the review report by the AP.

#### 5. The purpose of the review

The purpose of the review will be to:

- review the performance of the OAD against its objectives as articulated in the IAU Strategic Plan 2010-2020 within its resources during the period April 2011 to 31 March 2014;
- examine the IAU/NRF agreement with a view to its possible enhancement should the Agreement be renewed;
- assess whether the continuation of the OAD in South Africa would be desirable or not;
- make recommendations/suggestions to optimise the future development of the OAD.

#### 6. The scope of the review

The focus of the review will be retrospective covering the period from inception of the OAD in April 2011 to 31 March 2014. The review will also cover the future development of the OAD in order to strengthen and streamline its activities.

#### 7. Review dimensions

The panel is requested to assess the overall performance of the OAD in terms of the envisaged tasks as stipulated in the 2012 update of the Strategic Plan:

- 7.1 Management, coordination and evaluation of the IAU Programmes in the area of development and education.
- 7.2 Organisation of oversight of the IAU development programmes and the establishment of their annual budgets.
- 7.3 Liaison with the chairs of the various Commission 46 Programme Groups/ Commission 55/sector task forces in planning and implementing the relevant programmes.



- 7.4 Liaison with the IAU regional coordinators and IAU regional nodes in planning and implementing the relevant programmes.
- 7.5 Provision of administrative support for IAU programmes in development and education.
- 7.6 Establishment of the new IAU endowed lectureship programme.
- 7.7 Stimulation of communication on IAU development matters between members and associated members through the maintenance of an IAU website for development and education and appropriate forums.
- 7.8 Provision of information for astronomers in all developing countries about IAU programmes.
- 7.9 Proactive coordination and initiation of fundraising activities for astronomy development.
- 7.10 Management of OAD in terms of:
  - leadership;
  - staffing;
  - commitment of institution hosting the OAD;
  - location of the OAD;
  - funding;
  - strategic positioning of the OAD and future plans.

## **8. The review structure and process**

- 8.1 A panel consisting of three members will be appointed for the review of the OAD, two members from abroad nominated by the IAU and one member nominated by the NRF. The panel will be requested to compile a report at the conclusion of the review.
- 8.2 The resource documents for the review listed in the Annexure will be made available to the panel well in advance of the commencement of the review.
- 8.3 The service provider will draw up a programme for the review in consultation with the AP, the review panel and the management of the OAD. The panel will have the opportunity to interrogate the proposed programme and to recommend amendments and additions should the need arise.
- 8.4 The panel will have the opportunity to interview members/staff of the OAD and the NRF as well as other relevant stakeholders.
- 8.5 The review panel will decide on and pursue its own line of questioning during interviews.

## **9. Deliverables by**

### **9.1 Director of the OAD**

- 9.1.1 Self-evaluation report compiled by the OAD for transmission to the review panel at least seven weeks prior to the commencement of the review programme in South Africa. The report should address the terms of reference including the Review Dimensions (see Item 7 above) and should cover the period since inception of the OAD until 31 March 2014. It should not exceed 40 pages with annexures.

### **9.1.2 List of stakeholders**

Appointments/discussions with stakeholders will be arranged by the NRF Reviews and Evaluation Directorate in conjunction with the OAD to facilitate the task of the review panel.

The OAD will therefore be requested to supply the names of stakeholders with whom the OAD is currently interacting, will be interacting in the future and should be interacting but for some reason has not been able to do so yet. It would be helpful, if the names could be clustered under appropriate headings such as OAD staff, collaborators, students, etc. and if the stakeholders are ranked in order of importance as requested on the template to be provided to the OAD.

- 9.1.3 Concise information on the funds received by the OAD from national (including all sources in the NRF) and international sources per year for the period under review.
- 9.1.4 List of documents considered to be essential reading for the review panel and other documentation which should be accessible to reviewers during the review. Documents listed on the Annexure to the ToR for the review which are not in the public domain, such as the Quarterly Reports, Annual Performance Plans and Annual Performance Reports, are to be supplied to the Service Provider for onward transmission to the review panel four weeks in advance of the commencement of the programme in South Africa.
- 9.1.5 Written response to the final review report. This will also be placed on the NRF website.

## **9.2 Review panel**

- 9.2.1 Verbal feedback to the Director of the OAD as well as representatives of the host institution, NRF and other interested parties;
- 9.2.2 Draft report on completion of the stakeholder interviews;
- 9.2.3 Final report within two weeks of completion of the stakeholder interviews. The report should include:
  - an executive summary;
  - background to the review;
  - evaluation questions that were addressed;
  - key findings;
  - recommendations;
  - conclusions;
  - appendices containing, e.g. ToR, persons interviewed, etc.

## **10. Time frame**

The review will take place during 2014 or early 2015 depending on the availability of suitable reviewers.

## **11. Budget**

The service provider will submit a budget for the review to the AP for approval. The costs will be shared between the NRF and the IAU Executive Committee, as agreed.

## **DOCUMENTS FOR THE REVIEW PANEL**

### **ESSENTIAL READING**

- Self-evaluation report by the OAD.
- Agreement between the IAU and the NRF concerning the hosting of the OAD, 2010.
- IAU-NRF Addendum to the Agreement, May 2011.
- Consolidated 5-year OAD Business Plan 2011-2015.
- OAD funding framework, 2014.
- IAU: Astronomy for the Developing World, Building from the IYA 2009 Strategic Plan 2010-2020.
- IAU: Astronomy for Development, Building from the IYA 2009 Strategic Plan 2010-2020 with 2012 update on implementation.
- Consolidated 3-year performance report for review.

### **ADDITIONAL READING**

- OAD 5-year business plan 2012-13.
- OAD 5-year business plan 2013-14.
- OAD 5-year business plan 2014-15.
- Report of highlights from launch until December 2011.
- Report of highlights January – February 2012.
- Cumulative report for 2011-12.
- Quarterly Report for first quarter of 2012-13.
- Quarterly Report for second quarter of 2012-13.
- Quarterly Report for third quarter of 2012-13.
- Quarterly Report for fourth quarter of 2012-13.
- Quarterly Report for first quarter of 2013-14.
- Quarterly Report for second quarter of 2013-14.
- Quarterly Report for third quarter of 2013-14.
- Quarterly Report for fourth quarter of 2013-14.
- OAD Annual Report 2013-14
- OAD Monitoring and Evaluation Framework.
- Call for Proposals Report 2012.
- Call for Proposals Report 2013.

## **Annexure 2:**

### **AGREEMENT BETWEEN THE IAU AND NRF RE HOSTING THE OAD**

AGREEMENT between The International Astronomical Union, and The National Research Foundation of South Africa, concerning the hosting of the OFFICE FOR ASTRONOMY DEVELOPMENT of the IAU Strategic Plan "Astronomy for the Developing World"

#### **Considering that**

- the International Astronomical Union (hereinafter IAU) produced IAU Strategic Plan 2010-2020 "Astronomy for the Developing World";
- the IAU XXVII General Assembly, held in Rio de Janeiro, Brazil 3 - 14 August 2009 resolved to proceed with the implementation of this Strategic Plan;
- the IAU issued an Announcement of Opportunity (AO) to host the Office for Astronomy Development (hereinafter OAD) in October 2009;
- the South African Astronomical Observatory (hereinafter SAAO), a facility of the National Research Foundation (hereinafter NRF), submitted a proposal with the endorsement of the South African Department of Science and Technology (hereinafter DST) on 28 February 2010 in response to this AO, and subsequently responded to supplementary questions from the IAU;
- the IAU Executive Committee, at its meeting in Baltimore, USA, on May 11-13 2010, considered the proposals received and selected SAAO as the host for the OAD;
- the SAAO accepted the invitation of the IAU to host the OAD according to its proposal;
- the IAU for the one part and NRF (acting herein through the South African Astronomical Observatory) for the second part therefore agree as follows:

#### **I. Tasks and objectives of the OAD**

The OAD is the lead organization in the worldwide implementation of the IAU "Astronomy for the Developing World" Strategic Plan 2010-2020 with tasks as outlined in Section 4.1 of that Plan. It will provide the global coordination needed for an integrated strategic approach and in addition will be expected to initiate and develop new programs consistent with the goals of the Strategic Plan.

Its tasks will include:

1. Management, coordination and evaluation of the IAU programs worldwide in the area of development and education, including recruiting and mobilizing participating volunteers.
2. Organization of oversight of the IAU development programs and the formulation of their annual budgets.
3. Liaison with the chairs of the various Commission 46 Program Groups and sector task forces in planning and implementing the relevant programs.
4. Liaison with the IAU regional coordinators and IAU Regional Centres in planning and implementing the relevant programs.
5. Provision of administrative support for IAU programs in development, education, and outreach.
6. Coordination of contacts between the IAU and national authorities throughout the world.
7. Establishment of the new IAU endowed lectureship program.
8. Liaison with other international unions and agencies promoting astronomy in the developing world, such as UNOOSA, COSPAR and URSI.

9. Stimulation of communication on IAU development matters between members and associated members through the maintenance of an IAU website for development and education and appropriate forums.
10. Provision of information for astronomers in all developing countries about IAU programs.
- 11 . Proactive coordination and initiation of fundraising activities for astronomy development.

## **II. Legal Status of the OAD**

1. The OAD is a project of the IAU operated, on behalf of NRF, by SAAO under this agreement. The OAD is thus bound by the Laws of South Africa and the rules and regulations that apply to and within SAAO. Any necessary deviation from these regulations, due to the international nature of the OAD, should first be approved by the OAD Steering Committee after consulting the NRF.

## **III. Location of the OAD**

1. The OAD shall be located at the SAAO headquarters in Cape Town, South Africa.

## **IV. Responsibilities of NRF**

NRF will, through the SAAO, be the host and legal persona of the OAD, and the employer of the Director of Development and Education (DDE) and OAD staff. As such the NRF will, through the SAAO:

1. Ensure that the OAD conducts its affairs in accordance with the laws of South Africa and the requirements of the IAU.
2. Provide the facilities and services set out in this Agreement.
3. Support, assist and advise the DDE in the discharge of the tasks of the OAD.
4. Ensure that the DDE and OAD staff can carry out their tasks, as overseen by the OAD Steering Committee, free of other influence or interference.
5. Assist the IAU in seeking additional funding for the activities of the OAD.

The person within SAAO responsible for hosting the OAD on behalf of the NRF is the SAAO Director, acting under the authority of the NRF Corporate Executive.

## **V. Responsibilities of the IAU**

The IAU is responsible for the implementation of the IAU Strategic Plan 2010-2020 "*Astronomy for the Developing World*" and as such shall:

1. Advertise and promulgate the OAD activities worldwide. ~
2. Actively seek out additional funding for OAD activities through donations, in kind, support, etc.
3. Establish a network of Regional Centres linked to the OAD
4. Assist the OAD in the coordination of its activities under Divisions XII and Commission 46.
5. Support, assist and advise the NRF and SAAO in the hosting of the OAD, and the DDE in the discharge of the tasks of the OAD.

The person within the IAU responsible for the OAD and the Strategic Development Plan is the General Secretary, acting under the authority of the Executive Committee and the General Assembly.

## **VI. Financial Contributions**

### **(a) By NRF**

1. Contributions from NRF may be made in respect of specific programs carried out by the OAD in fulfilment of NRF objectives.
2. Any contributions from DST to NRF in respect of the OAD and its programs shall be the subject of separate arrangements between DST and NRF.

### **(b) By IAU**

1. While this Agreement is in force the IAU will pay NRF annually, upon presentation of an invoice, the sum of 50,000 EUR, or such greater sum as may have been agreed between IAU and NRF. This amount may be paid directly in the SAAO bank account if deemed more practical by all concerned parties.
2. Further contributions from IAU may be made in respect of specific programs carried out or funded by NRF with the approval of the IAU.

## **VII. Services and Facilities provided by NRF**

The NRF, through its facility, the SAAO, will provide the following for the OAD:

1. Office space at SAAO headquarters in Cape Town
2. Communications and IT support
3. Administrative support during initial setting up of OAD
4. Financial management support
5. HR management support
6. Auditorium and accommodation facilities for conferences and workshops

The details of the above will be negotiated between the Director of Development and Education, once appointed, and the SAAO.

## **VIII. Additional Resources**

1. The OAD will be give reasonable access to NRF projects and expertise relevant to the OAD, especially those based at the SAAO.
2. The IAU will provide additional high level administrative assistance where necessary. The details of the above will be negotiated between the Director of Development and Education, once appointed, and the SAAO and IAU.

## **IX. Oversight**

1. The IAU and NRF shall jointly establish a body, to be known as the OAD Steering Committee, which shall exercise general oversight of the activities of the OAD and DDE.
2. The OAD Steering Committee shall be formed upon this Agreement entering into force, and shall comprise 3 members nominated by the IAU and 3 members nominated by the NRF. The Chair of the OAD Steering Committee shall hold office for 2 years and shall alternate between a nominee of the IAU and a nominee of NRF.
3. Members of the OAD Steering Committee shall normally serve a maximum of 4 years unless appointed Chair, in which case the maximum term shall be 6 years.
4. The OAD Steering Committee shall define its own Rules of Procedure.

## **X. Appointment of Director of Development and Education**

- 1 The IAU and SAAO (as mandated by NRF as the host of the OAD and employer of its staff) shall jointly advertise the position of Director of Development and Education (DDE).
2. The selection of the DDE shall be done by the OAD Steering Committee and shall be subject to the ratification of the IAU Executive Committee and NRF.
3. The DDE shall be employed by the NRF at SAAO, which shall fix the remuneration, benefits, social charges, and terms and conditions of employment, subject to the approval of the OAD Steering Committee.

## **XI. Recruitment of Staff**

1. The DDE shall be responsible for recruiting the staff of the OAD in line with the procedures of the NRF, and with due consideration of the international nature of the OAD.
2. All staff shall be employed by the NRF at SAAO, which shall fix the remuneration, benefits, social charges, and terms and conditions of employment, subject to the approval of the OAD Steering Committee.

## **XII. Terms and Conditions of Employment of DDE and OAD Staff**

1. Unless special circumstances require different arrangements, to be agreed by the OAD Steering Committee, all staff shall be employed under the NRF standard terms and conditions of employment.

## **XIII. Evaluation of Staff Performance and Remuneration**

1. The OAD Steering Committee shall assess the performance of the DDE annually, setting objectives for the following year, and shall report in writing to the IAU Executive Committee and NRF. Within the limits of the budget, the OAD Steering Committee may set the remuneration of the DDE.

2. The DDE shall assess the performance of the OAD staff annually, setting objectives for the following year, and shall report in writing to the OAD Steering Committee. Within the limits of the budget, the DDE may set the remuneration of the staff.
3. Termination of contracts of employment shall follow the procedures and rules which apply to equivalent employees of the NRF, with due consideration of the international nature of the OAD and thus high impact of underperformance.

#### **XIV. Budget and Budget Control**

1. The Financial Year of the OAD shall be the same as the financial year of the NRF for audit and reconciliation purposes.
2. The budget of the OAD shall be proposed to the OAD Steering Committee annually by the DDE in such detail as may be decided from time to time by the OAD Steering Committee.
3. Within each Financial Year the DDE shall have total control of the OAD finances, provided that expenditure does not exceed the overall budgeted income and that any unusual or unexpected expenditure is reported promptly to the Steering Committee.
4. Any increase in expenditure in year shall have the source of funding agreed and shall be approved in advance by the OAD Steering Committee.

#### **XV. Programme and Financial Reporting**

1. The DDE shall report annually in writing to the OAD Steering Committee on the programme completed, future plans, and financial status of the OAD.
2. The DDE shall present annually to the OAD Steering Committee for approval an income and expenditure budget for the following year.
3. The Steering Committee shall present a written report annually to the IAU and NRF on the programme completed, future plans, and financial status of the OAD, including the approved budget.
4. Fundraising activities shall be reported to the IAU separately.
5. A publicly accessible annual report, approved by the OAD Steering Committee, shall be produced and distributed to funders and stakeholders.
6. Regular updates on activities of the OAD shall be made available on the OAD website and distributed via other means of electronic communication as appropriate.

#### **XVI. Reviews**

1. At intervals of not less than 2 years and not more than 4 years the IAU and NRF shall arrange for independent reviews of the performance of the OAD. The terms of reference of such reviews shall be set by the IAU Executive Committee in consultation with NRF and the review body shall report directly to the IAU Executive Committee and NRF.
2. Unless agreed otherwise by the OAD Steering Committee, there shall be a review before each IAU General Assembly timed such that the IAU Executive Committee can report to the General Assembly on the outcome of the review.
3. Unless agreed otherwise by the IAU Executive Committee, the DDE shall present a report on the activities and achievements of the OAD to each IAU General Assembly and which shall be included in the published Transactions of the IAU.

#### **XVII. Duration of Agreement**

1. This agreement shall come into force on the date of signature by the IAU and NRF, and shall remain in force until 31 December 2015. It shall thereafter be renewed by the IAU and NRF at 3-yearly intervals.

#### **XVIII. Termination of Agreement**

1. This agreement may be renegotiated or terminated at any time with the agreement of all signatories.
2. The NRF or the IAU may each terminate this agreement unilaterally by giving notice in writing not less than one year in advance of the proposed date of termination. Such notice shall give the reasons for the termination and shall set out how existing obligations will be discharged. During this period the IAU and NRF shall endeavour to honour all obligations and commitments to each other and to any implicated third parties.



3. The NRF and the IAU may mutually agree to terminate the present Agreement in the case of natural hazard, civil unrest (whether the acts causing the unrest are lawful or unlawful), uprising, acts of terrorism, national or international emergency or conflict, labour unrest, the emergence of a risk to public health or safety, or similar events, which make the carrying out of the functions of the OAD impossible and unreasonable for the IAU or NRF. The IAU General Secretary and NRF President shall determine the existence of any of the said or similar events jointly in so far as they present an obstacle to hosting the OAD.
4. Where termination occurs as a result of such a decision, the IAU and NRF agree that they shall not claim indemnities for any of the costs or other responsibilities that arise directly or indirectly from such termination.
5. Should the IAU Executive Committee decide that NRF is not meeting or is unlikely to meet its obligations under this Agreement, or that the OAD is unable to fulfil its objectives while hosted within the SAAO, the IAU General Secretary shall immediately inform NRF in writing of the concerns of the Executive Committee. NRF will then have a reasonable period of time to respond to and address these concerns and present its resolution in writing to the Executive Committee.
6. Following review of the written response from NRF and assessing the impact of the proposed resolutions to the matters of concern, the IAU Executive Committee may unilaterally terminate the present Agreement should it decide that NRF is reasonably likely to fail to meet its obligations under this Agreement for any reason other than those identified in paragraph 3 above, and may, in such circumstances, seek compensation from NRF, taking into account any extenuating circumstances.

#### **XIX. Disputes**

1. Any dispute over the interpretation of this Agreement shall in the first instance be resolved by negotiation between the Director of the SAAO (acting as host on behalf of the NRF) and the General Secretary of the IAU. Should this fail negotiation between the President of the IAU and President of NRF may proceed to a decision, which shall be binding on both the NRF and the IAU.

*For the International Astronomical Union*

Ian Corbett, General Secretary. Date: 30 July 2010

*For the National Research Foundation*

Albert van Jaarsveld, President and CEO Date: 30 July 2010

**Annexure 3:**

**INTERVIEWEES: REVIEW OF THE OAD**

**Review Period:**

**Monday 8<sup>th</sup> February to Friday 13<sup>th</sup> February, 2015**

**IAU Executive Committee**

- Prof Piero Benvenuti, IAU Assistant General Secretary
- Dr Ian F Corbett, IAU Past General Secretary and Advisor to the Executive Committee, UK
- Prof Norio Kaifu, IAU President, National Astronomical Observatory of Japan
- Prof Thierry Montmerle, IAU General Secretary, Institut d'Astrophysique de Paris, France
- Prof Robert Williams, IAU Past President, Space Telescope Science Institute, USA

**Extended Development Oversight Committee member**

- Prof Mary Kay Hemenway, President, IAU Division C (Education, Outreach and Heritage), The University of Texas, USA

**Department of Science and Technology**

- Dr Daan du Toit, Deputy Director-General: International Cooperation and Resources in Brussels
- Dr Mathoto Thaoge, Deputy Director: Astronomy and African Space Science

**OAD Steering Committee**

- Prof Claude Carignan, South African SKA Research Chair in Extragalactic Multi-Wavelength Astronomy, University of Cape Town
- Prof George Miley, Leiden University, The Netherlands
- Dr Khotso Mokhele, Chair, OAD Steering Committee
- Dr Kaz Sekiguchi, National Observatory of Japan
- Prof Patricia Whitelock, SAAO and UCT

**OAD**

- Mr Kevin Govender, Director
- Ms Eli Grant, Project Officer
- Ms Nuhaah Solomon, Administration Officer

**South African Astronomical Observatory**

- Prof Ted Williams, Director

**Square Kilometre Array**

- Dr Rob Adam, Director Designate (w.e.f. 1 April 2015)

## **Task Force Chairs and Co-Chairs**

### **Task Force 1: Universities and Research**

- Dr Edward Guinan (Chair), Villanova University, USA

### **Task Force 2: Children and Schools**

- Mr Pedro Russo (Co-chair), Leiden University, The Netherlands
- Dr Edward Gomez, Las Cumbres Observatory Global Telescope Network/ Cardiff University, UK

### **Task Force 3: Public Outreach**

- Dr Carolina Ödman-Govender (Vice-Chair), SAAO/SKA
- Prof Ian Robson (Chair), Royal Observatory Edinburgh, Scotland

## **Regional Nodes**

- Prof Richard de Grijs, Coordinator for the East Asian Regional Office and member of Task Force 1: Universities and Research, Peking University, Beijing, China
- Dr Kelali Tekle, Regional Node: East Africa (since August 2014), Addis Ababa University, Ethiopia
- Dr Solomon Tessema, Regional Node: East Africa, Entoto Observatory/ Kotebe University College, Addis Ababa, Ethiopia

## **Project leaders 2014**

- Dr Nadeem Oozeer, Project Leader: Joint Exchange Development Initiative for Africa

## **National Research Foundation**

- Prof Nithaya Chetty, NRF Deputy CEO: Astronomy

