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# THE INTERSECTION BETWEEN ASTRONOMY AND MENTAL HEALTH

A team from the International Astronomical Union's Office of Astronomy for Development (OAD) has been studying the opportunities that arise where astronomy and mental health intersect. Pilot projects are using astronomy to help people improve their mental health and well-being. The OAD is examining the link between astronomy activities and the change of negativism in people with depression as they shift from a fixation on their own feelings to a larger perspective. The OAD is also looking at how similar activities affect those with phobias and fears.

In order to appreciate this work,

this article contextualises astronomy, mental health and the South African mental health crisis.

Astronomy is the study of the sun, moon, stars, planets and other objects and phenomena in space. Although the study of space may conjure up images of high-powered telescopes and potatoes growing on mars, astronomy's roots are interwoven through our species history.

Humans have always had a fascination with the night sky. With an ever-expanding curiosity, humans have explored, investigated and imagined stories about the sky and

the stars. Humans are born story tellers and have used storytelling to share experiences, knowledge and cultural norms. These folk tales, myths and stories created shared experiences with the power to unite people. They provided answers to the questions we held and explained natural occurrences.

Over time, as science became more established, fact and myth diverged. While it's easy to relate to the stories and tales within mythology, it might be hard for some to relate to the scientific study of the night sky. There are, however, many discoveries

and technological advances made through astronomy that benefit us in our daily lives - from GPS devices to Wifi (More examples at [https://www.iau.org/public/themes/astronomy\\_in\\_everyday\\_life/](https://www.iau.org/public/themes/astronomy_in_everyday_life/)).

But a team of scientists, clinicians, volunteers and academics are exploring beyond technological advances. There is growing evidence of the potential of astronomy to improve people's well-being and mental health.

While these may seem like more modest aims than life on Mars, community mental health is central to societal development. Mental health is key in realising human potential, being able to live and work effectively, and contributing to society. In the absence of mental health, all aspects of life suffer. This results in poor quality of life, poor health, reduced cognitive ability, struggles in our work life, and breakdown of our social relationships. Fundamentally mental health is a healthcare issue. It's a fundamental human right.

This is why mental health initiatives were a natural fit with the OAD's mission: "Astronomy for a better world". The project "Astronomy for Mental Health" explores how astronomy can be a viable tool for improving mental well-being.

Astronomy and mental health intersect in many ways:

- We use the awe of nature to grab attention.
- We focus away from the mental health issue and allow our mental energy to be restored.
- We engage in a shared activity and thereby experience social integration, connectedness and belonging.
- We learn more and expand our understanding leading to new questions, interests and ideas.
- We share stories about our experiences, discover, and explore.
- We are provided with opportunities to change our perspective and reframe our problems.

There is a growing body of literature examining the role of nature in

copied with psycho-physiological stress. Findings showed that natural environments, whether real or virtual, produced positive mood change, mediated the negative effects of stress and enhanced positive emotions. This was supported by Kaplan's Attention Restoration Theory (referred to as 'ART'). ART states that nature provides effective "distraction" from the psycho-physiological stress that people experience. It allows people to restore their mental energy. It gives a respite after which one can go back and face challenges anew with new energy or perspective.

Nature-orientated programs resulted in:

- positive emotions,
- healthy relationships,
- physical activity,
- involvement and familiarity within the community,
- exhibition of skills that enable acceptance in the community, and
- perceived inclusion within the community.

Astronomy as a science is nature-oriented. Through star gazing, education, legends and stories it's a medium for individuals and groups to engage with nature, restore mental energy and build resilience.

So how does this play out practically? At the OAD various pilot projects have been running both within South Africa and globally. These pilot projects show great promise. Not only have participants reported reduced stress and anxiety, but the projects have resulted in active engagement and various collaborations with mental health professionals which will bear fruit in the coming months.

While pilot projects have been running in countries such as Spain and Armenia since 2021. Covid-19 emphasised the need to roll out the programme in South Africa as a priority. South Africa has a massive mental health service gap with 91% of the South African population in need of mental health care not receiving treatment. In a society with large scale inequality, structural barriers, poor resourcing of mental

health services, transportation difficulties and stigma, Covid-19 had a devastating impact. The Human Sciences Research Council found that during the first lockdown 33% of South Africans were depressed, 45% were fearful, and 29% experienced loneliness. In May 2022 the South African Government Ministerial Advisory Committee on COVID-19 released its findings recommending that South Africa build a better mental health system with an emphasis on community oriented mental health services.

The OAD has identified the following practical interventions:

- Star gazing as a relaxation and restoration activity for individuals or groups.
- Narrative creation for dispersed or refugee populations focusing on the fact that, despite being physically separated, we are all under the same sky.
- Mindfulness and meditation activities focusing on the awe of the night sky.
- Encouraging and providing social connection and inclusion for all age groups through group led activities.
- Providing cathartic outlet to emotions and experiences through art-based activities.
- Educating children and allowing them the opportunity to consider a future in STEM (Science, Technology, Engineering, and Mathematics) regardless of their current situation.
- Collaborating with organisations within the mental health and well-being space to reach vulnerable groups.

All of this is only the beginning. The OAD is on an exciting journey and would like to invite anyone who wants to get involved, find out more or share their ideas and questions to reach out to the team. Please email to [mentalhealth@astro4dev.org](mailto:mentalhealth@astro4dev.org). **MHM**

**References available on request**