

## **Introduction to RAFCAP**

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The Radio Astronomy Frequency Committee in the Asia-Pacific region (RAFCAP) is a scientific expert committee on frequency matters in radio astronomy and related sciences in this region. The goals of RAFCAP include protecting the frequency bands of the Radio Astronomy Service (RAS) from radio interference, coordinating the scientific needs of RAS within the Asia-Pacific region, and cooperating with the associated science communities to ascertain protection of the designated frequency bands for passive science services.

RAFCAP was established during the AP-RASC meeting in 2001. At the same time, the charter for RAFCAP was accepted by the committee. The members of the committee are recommended from the related institutes and organizations in the Asia-Pacific region. Many activities like group meetings and spectrum management schools have been held. Moreover, most of the members have been involved with the activities of the International Telecommunication Union (ITU). In recent times, scientific radio facilities have been developed rapidly in the Asia-Pacific region. The East-Asian VLBI Network (EAVN) includes 14 telescopes: Tianma, Nanshan, Sheshan, VLBI Exploration of Radio Astrometry (VERA), the Korean VLBI Network (KVN), Nobeyama, Takahagi, Hitachi, and Yamaguchi. These facilities have been operational to study Active Galactic Nuclei, Star Formation, Evolved Stars, Astrometry, Pulsars and Transients, and Geodesy. Meanwhile, the radio telescopes in Australia and India (ATCA, Parkes, ASKAP, MWA, GMRT, etc.) have contributed many useful science outcomes. In China, the 500-meter Aperture Spherical radio telescope (FAST) has been commissioned. In addition, some projects for new radio telescopes have been proposed, for instance 110m and 120m radio telescopes in China, SKA in Australia, a 40m Thai National Radio Telescope (TNRT) in Thailand, a 32m Jatiluhur in Indonesia, and radio facilities in Malaysia in South-East Asia. However, due to the development of radio communication services and economy in this region, the protection of the radio environment around the telescopes has become more critical than ever before.

RAFCAP aims to address the challenges of the deteriorating radio environment around the current and proposed telescopes by actively engaging the regional and international study and discussion groups concerned with frequency allocation and protection, as well as by fostering technical research on radio interference mitigation techniques. Several radio quiet zones have been established in Asia-Pacific region thus far, providing an effective measure to maintain or even improve the scientific output of the radio facilities.

## References

[1] M. Ohishi, "The Need for a United Asia-Pacific Radio Astronomy Front", 2001, https://www.atnf.csiro.au/rafcap/