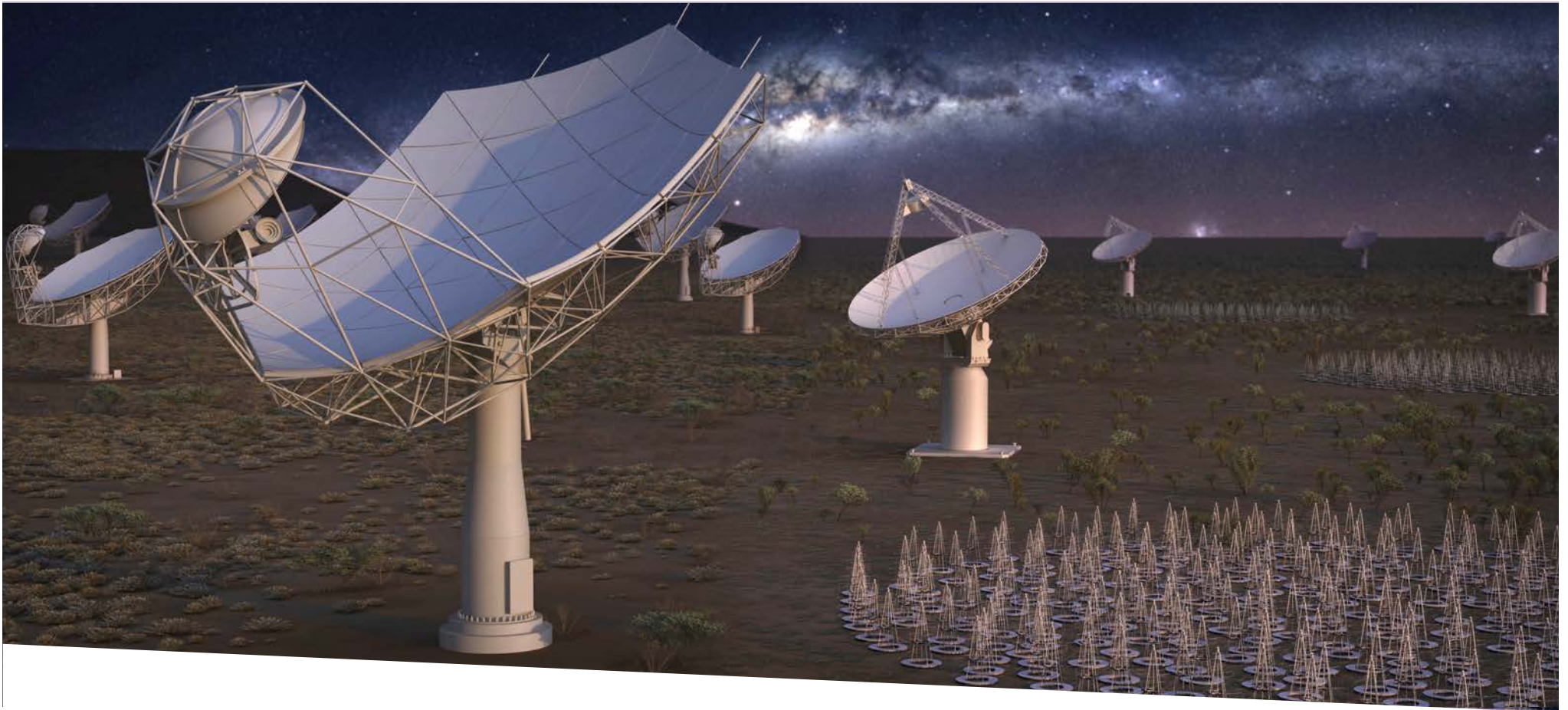


SKA SWG Update



SQUARE KILOMETRE ARRAY

Exploring the Universe with the world's largest radio telescope

Robert Braun, Science Director

15 Oct 2019

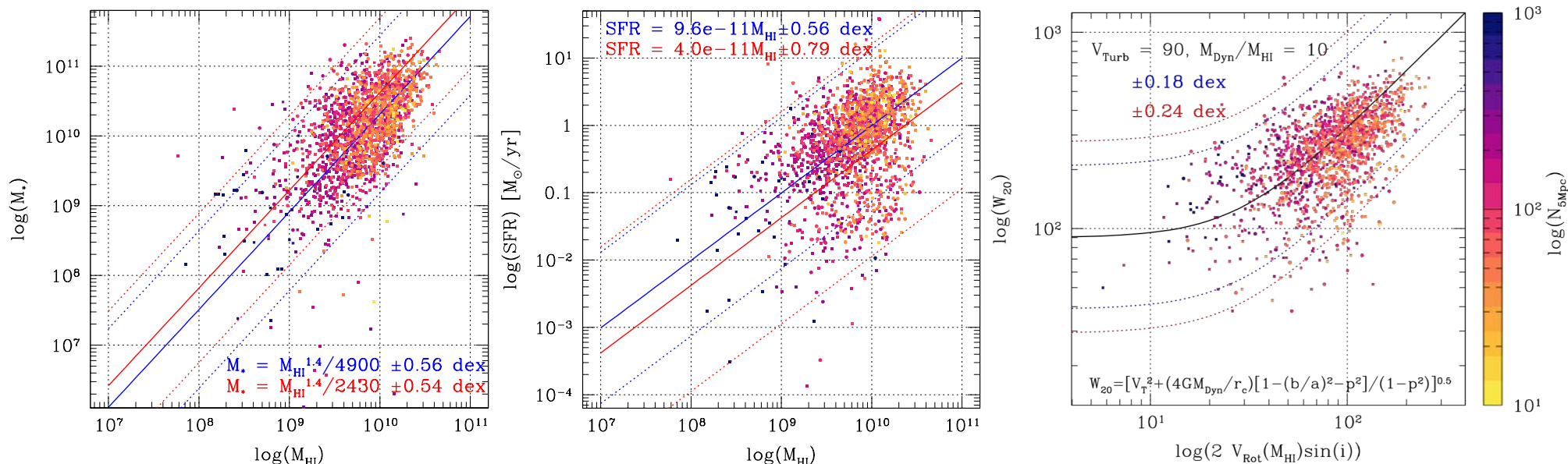
Science Activity Updates

- SKA Data challenges Workshop at INAF (Anna)
- Science Data Challenges (Anna, Philippa, RB)
- Round table SWG updates (All)
- SKA related meetings
- AOB

Data Challenges, Moving forward.....

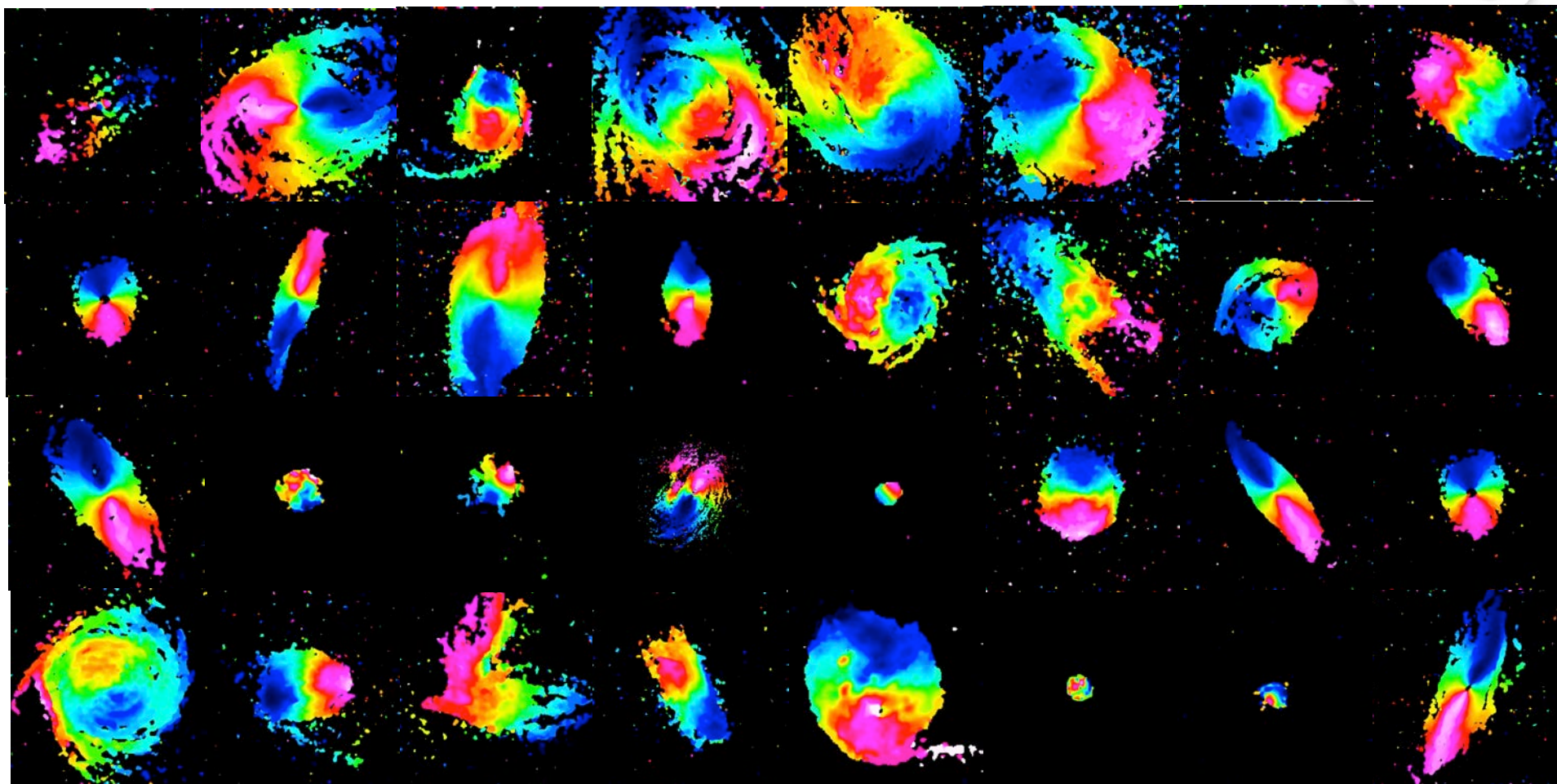
- Suggestions for SDC2 –
 - Transients
 - One sub-band image: Low (200 MHz) and Mid (1.4 GHz), cadence of once(?) per day for entire calendar year(?)
 - Various populations with time constants of days to months
 - **HI Emission/Absorption**
 - **Red-shift / Sky coverage: $z = 0(?) - 6(?) / N(?) \text{ deg}^2$**
 - **Resolved plus unresolved targets**
 - Polarisation
 - Introduce plausible Q,U signatures into continuum sky model and generate (I,Q,U) cubes $N(?) \text{ deg}^2$ with suitable frequency sampling (Freq_Max, Freq_Min, Delta_Freq)?
 - Foregrounds
 - Explore foreground removal effectiveness for EoR and Intensity Mapping applications

SDC2 Update



- HI emission signatures: statistical properties of large sample
 - Use ALFALFA atlas of (high s/n) spectra and optical counterparts
 - Connected to optical morphology and inclination with WND-CHARM and 2MASS (Kuminski & Shamir 2016, Skrutskie et al 2006)
 - Connected to M_* and SFR via galSpec within SDSS DR14 (Kauffmann et al. 2003, Brinchmann et al. 2004)

SDC2 Update



- HI emission signatures: resolved atlas of real objects
 - HALOGAS, THINGS cubes with randomized PA, inc, modulation



Upcoming SKA-related Meetings

- VLBI Workshop, 14 – 18 October, SKA HQ
<https://indico.skatelescope.org/event/539/>
- OzSKA Meeting, 6 – 7 November, Mt Stromlo
<https://www.atnf.csiro.au/research/OzSKA2019.html>
- SKA Eng. and Ops. Meeting, 25 – 28 Nov Shanghai
<https://indico.skatelescope.org/event/551/>
- PHISCC 2020 Meeting, 11 – 13 May, Cagliari
<https://sites.google.com/inaf.it/phiscc2020/>



SKA Jobs



- About to advertise a 3-year postdoctoral position
- 100% FTE research in area of **Fast Radio Burst** science
- Project: “*Studies Using Pulses of Extragalactic Radiation for Helium Reionization Observation*” (SUPERHeRO)
- Funded by grant from *Fondation MERAC* (PI: Keane)
- Details will be sent to swg-all, AAS Job Register, ...



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