

The SKAO logo is rendered in a bold, white, sans-serif font. The letter 'A' is stylized with a black starburst pattern inside it. The background of the entire slide is a composite image showing a night sky with a vibrant rainbow and the Milky Way galaxy, and a landscape of radio telescope dishes in a dry, open field. A small white pickup truck is visible in the lower-left foreground.

SKAO

SKA SWG Update

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16/9/25

SKA Science Update

- Community Engagement plans
- Science Data Challenges
- SKAO Science Book
 - Chapter revision strategy
- AOB

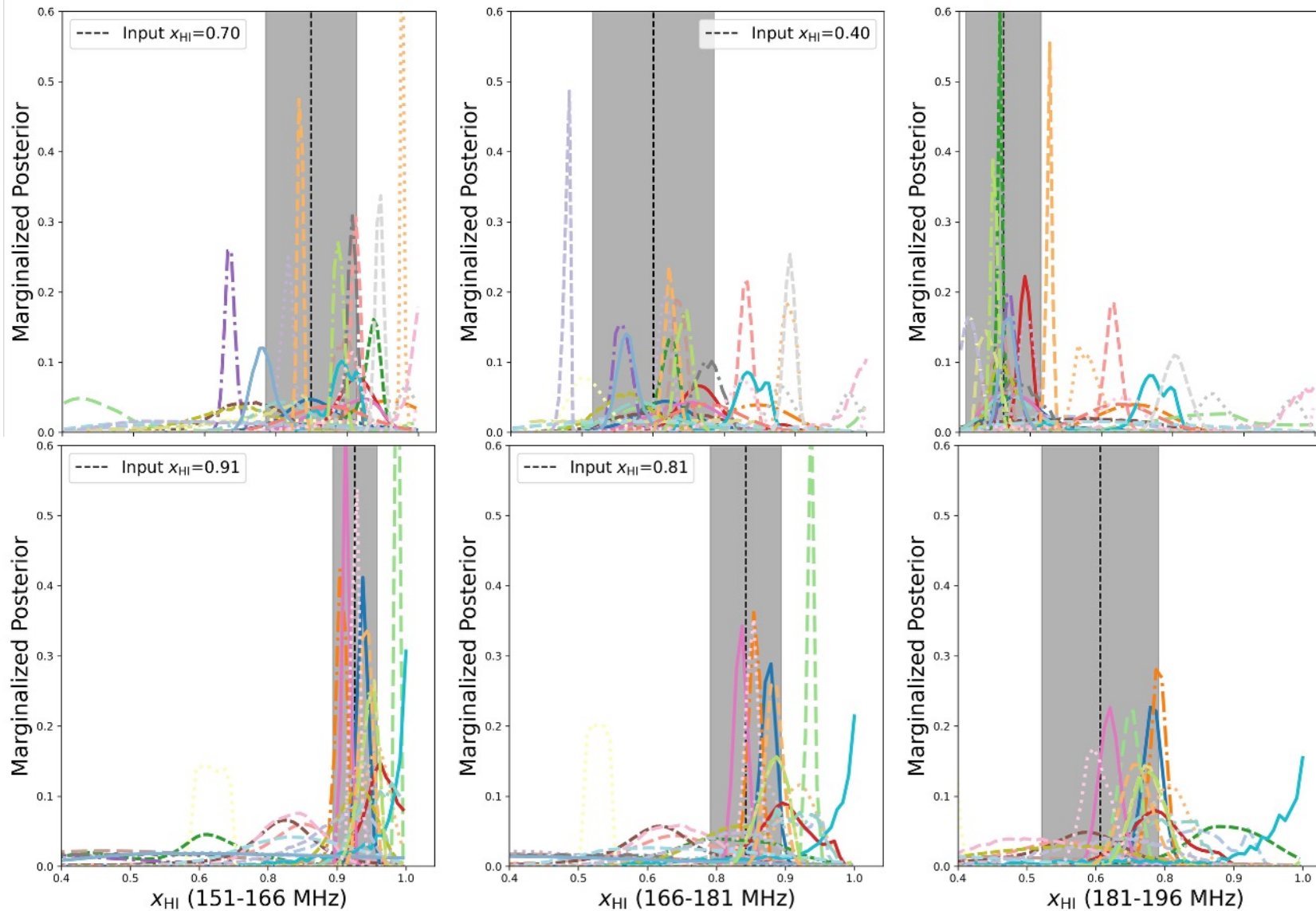


PS1 dataset comparison

Vertical line and shaded area: input neutral fraction x_{HI} at three redshifts (frequencies) and its evolution

Coloured lines: posterior probability distribution for x_{HI} estimated by different teams

PS2 dataset comparison



SDC3b preliminary conclusions

- Do different inference codes reach the same overall conclusion?
 - Not yet
 - Range of inference results, particularly for dataset PS1 but to some extent also for PS2
 - Does performance depend on the actual reionization scenario?
 - Yes
 - Results for PS2 are more in agreement with each other and with the input than for PS1
 - That could depend on the particular scenario and/or simulator used
- What are the next steps?
 - There will be a publication exploring the current comparison in more details
 - A community-wide alignment of inference codes is recommended ahead of SKA EoR data analysis



Updated SKAO Science Book

"Advancing Astrophysics II"

- An up-to-date coverage of the science questions that will be addressed by the *Design Baseline (AA4) SKA telescopes*.
- **Current status:**
 - 241 chapters planned for the book ([link](#))
 - Identified following review and consolidation by SWG chairs of over 350 Expressions of Interest
- **Book structure:**
 - Organised into broad themes: traditional scale-based
 - Will include overview section from each SWG
- **Timeline**
 - Chapter submission deadline 31st October 2025 (confirmed)
 - Full [Instructions for Authors](#) and [LaTeX template](#)
 - Peer review round Q4 2025/Q1 2026 (tentative)
 - Inviting SKAO community, relatively light touch
 - Further editing round Q2 2026 (tentative)
 - Editorial board: SKAO Scientific Services team and SWG co-chairs
 - Publishing by Q3 2026 (tentative)
 - Beginning work with SKAO Comms team to investigate publishing options

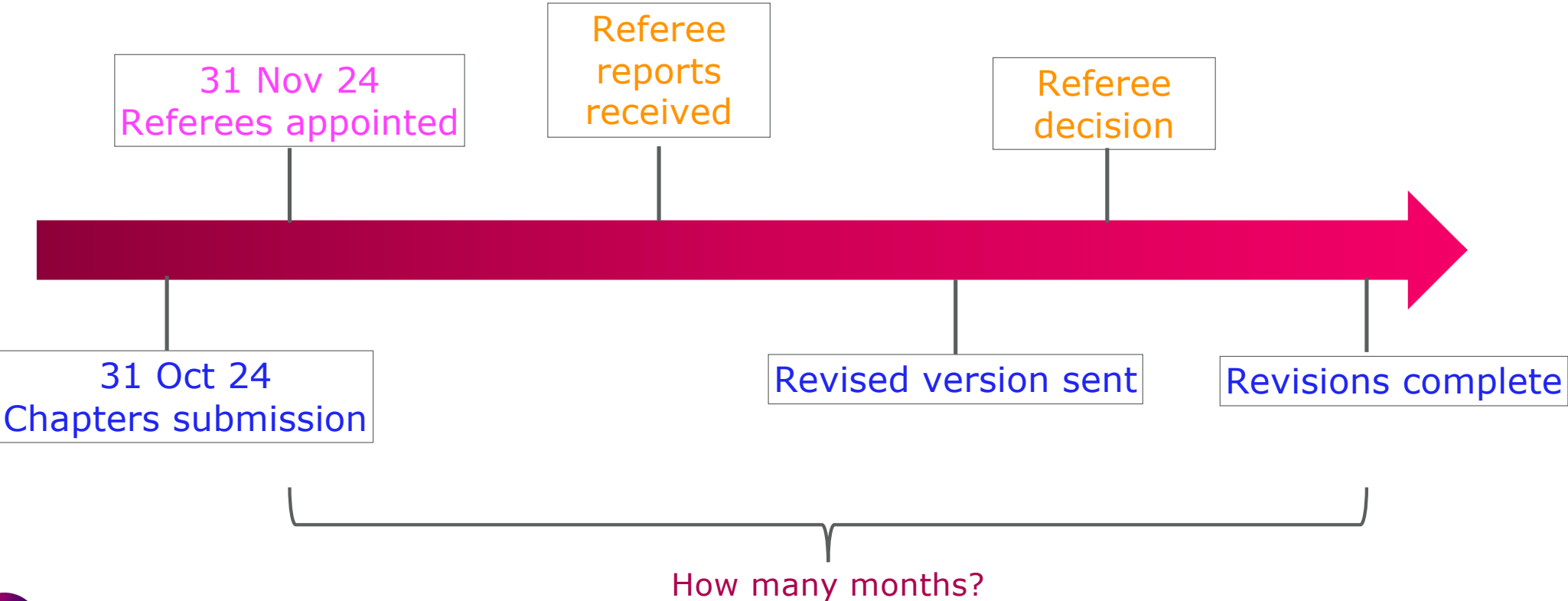


Proposed timeline for submission and revision

Action on: referees

Action on: editorial board

Action on: authors



Reviewers



Members of the community with expertise relevant to the paper, not co-authors or conflict of interest

- “Light” review in the period December 2025-TBC
 - Does the chapter meet the main and additional goals (Instructions to Authors section 2.1)?
 - Does the chapter make sense?
 - Is it clear and well-written?
 - Is it concise - can it be shortened without loss of clarity?
 - Are figures and tables clear? Are they sufficient and relevant?
 - Are references appropriate and complete?
- Check that the revised version addresses the comments and make final decision

Revised version
without any
substantial need
for new analysis



Editorial board



- Appoint referees in the period end of October-end of November
- Chase referee reports if necessary
- Check referee reports and decision(s)



Assigning editors

- Every paper needs an editor, which means every editors will have several papers!
- How do we do it?
 1. By number: split all papers equally to all editorial board members
 2. By SWG: papers from an SWG to be split between the two chairs. SKAO SciServ to handle conflict of interest papers or to reduce excess load
 3. Any other idea?



Appointing referees

- We foresee a large number $O(200)$ papers!
- We need a streamlined and efficient method for assigning referees
 - Option for authors to suggest possible reviewers at submission
 - Editors can also add more possible names from their own knowledge of the community/paper searches, etc.
- But in addition we suggest:
 - Send a form to SWG members to volunteer to be in a pool of potential reviewers
 - Tags (keywords) on both papers and volunteer reviewers to help reviewers' assignment



Selecting keywords

- A manageable list of keywords to qualify both paper topics and reviewers' expertise
- Selectable on paper submission and referee volunteering form
- What's on the list:
 - SWG name to identify broad area
 - Additional keywords: let's work on a list together!
 - https://docs.google.com/document/d/1SFp5WEIU2Ge6vhP2Yuk_P-6g4X3Zzvtgepy6Vk6PO7o/edit?usp=sharing
 - Aim to finalise keywords **by 15 Oct**
 - Referee volunteers call and chapter submission form can then go live!



Editorial board and referees acknowledgment

- Editorial board members to be explicitly acknowledged on the book
- Reviewers list to also appear on the book, with no mention of which papers they reviewed



Any Other Business

- Feedback on observing modes rollout – Shari's email
- News from SWG Chairs?
- ...

We recognise and acknowledge the Indigenous peoples and cultures that have traditionally lived on the lands on which our facilities are located.

SKAO

www.skao.int
www.skao.int/en/science-users