

EAO AND SUBARU

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EAST ASIAN OBSERVATORY

- Incorporated late 2014
- Concept: "Think Big"
- Ability to expand to larger projects, more telescope access and greater leadership



- By linking the regions, the funding can be lifted up to a level above just astronomy/science (the ESO for Asia)



- EAO took the opportunity to assume JCMT operations
- Why? - Perfect basis for future EAO projects
 - Operations: tested and efficient by design and adversity - software, systems and policies are highly transferable to other EAO projects
 - Instrumentation: new instrument plans perfectly tap into the skills and interests of EAO regional labs - bigger, better instruments are possible
 - Science: JCMT becomes testing ground for how best to merge and enhance regional scientific cooperation and push out past the cutting edge
 - High level of compatibility with existing East Asian interests
 - ALMA
 - VLBI - EHT
 - GLT
 - Nobeyama and ASTE
- The UK and Canada continue as operational funding partners in JCMT

WHAT EAO WANTS TO DO



- Combine and focus the vast potential of the East Asian Regions
- Stronger collaborations to improve science quality and diversity
- Increase student opportunities to broaden experience
- Multi-telescope access
- Increase scope and size of instrument projects



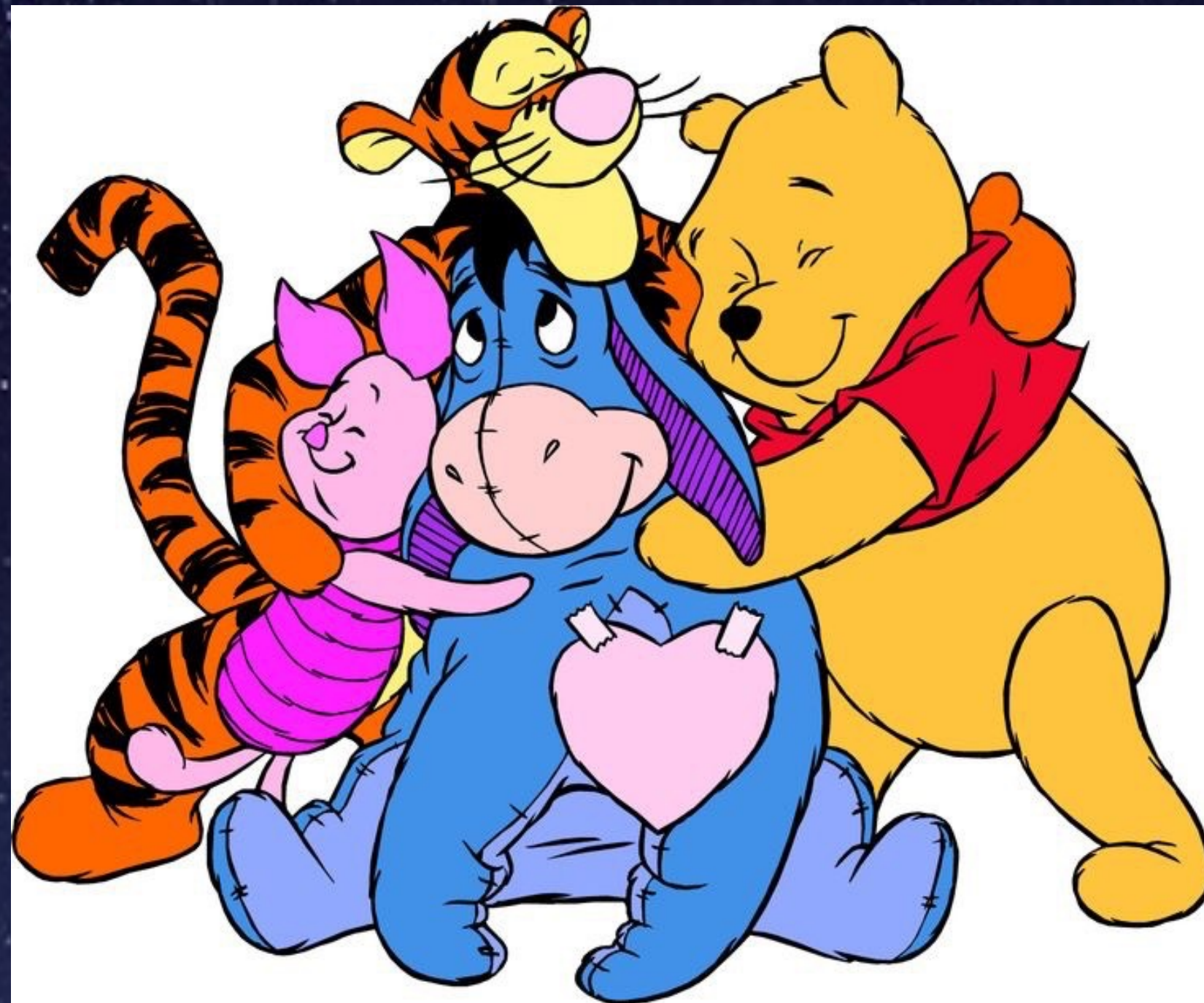
JCMT OPERATIONS

- Observing time distribution: 50% Large Programs; 50% PI Proposals
- TAC: one unified TAC process - priority on telescope by science ranking
- Observers: Scheduled Projects send Observers, observer project priority if in weather grade - we have had over 250 East Asian astronomers visit since March 2015
- Queue Mode: Flexible Schedule according to Weather
- Currently partial on-site and partial remote night observing
- Priority placed on promoting collaboration between participating scientists



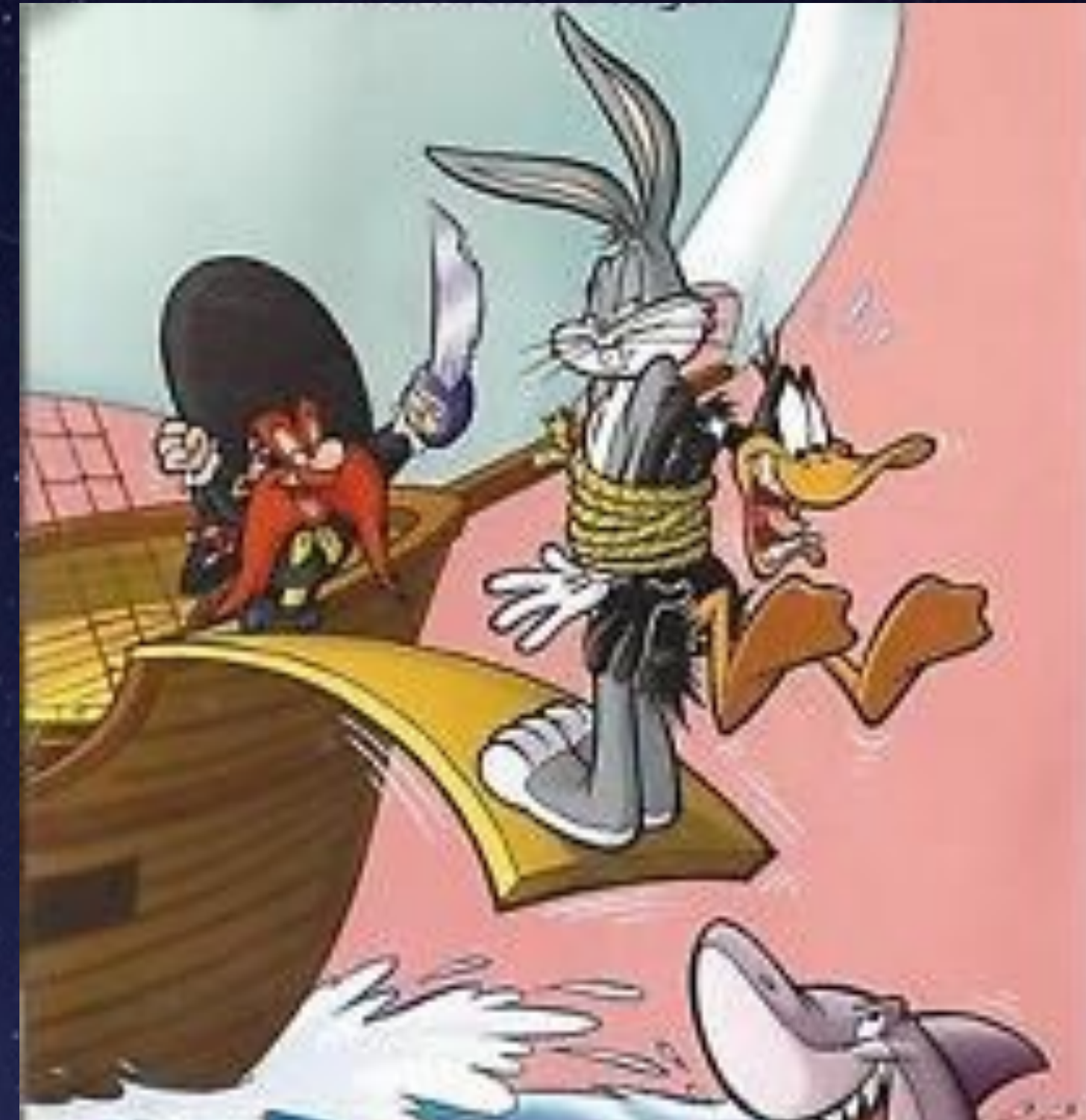
HOW TO CREATE COLLABORATION?

Encourage (carrot)



PI programs

Enforce (stick)



Large programs

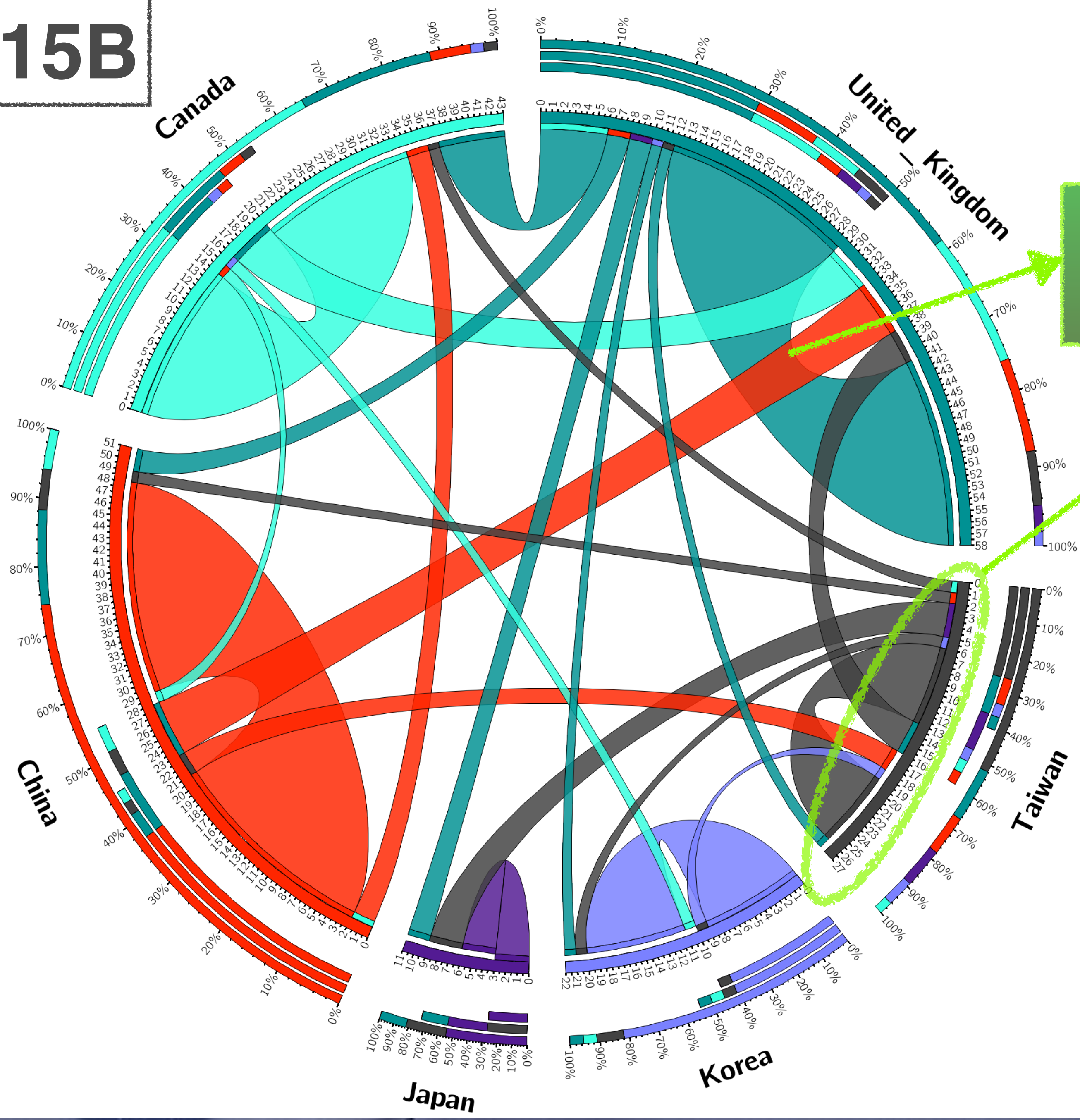


P.I. TIME ALLOCATIONS

- 50% of each semester's science time is allocated to PI science
- We have a single TAC reviewing all regional submissions
- We have a fractional allocation algorithm designed to encourage collaborations between regions with experience (but little \$ therefore allocation) and less experienced regions with a lot of time to play with
- The key is to reward P.I.s who look to collaborate strongly between regions - and so we try to make that as easy as possible
- The TAC is charged with over-filling our flexible queues by 30-50%, and to maintain an eye on the relative regional allocations (which are scaled by financial contribution)
- We leave a fraction (currently 10%) open to 'Best Science' and this is not debited against any regional allocation

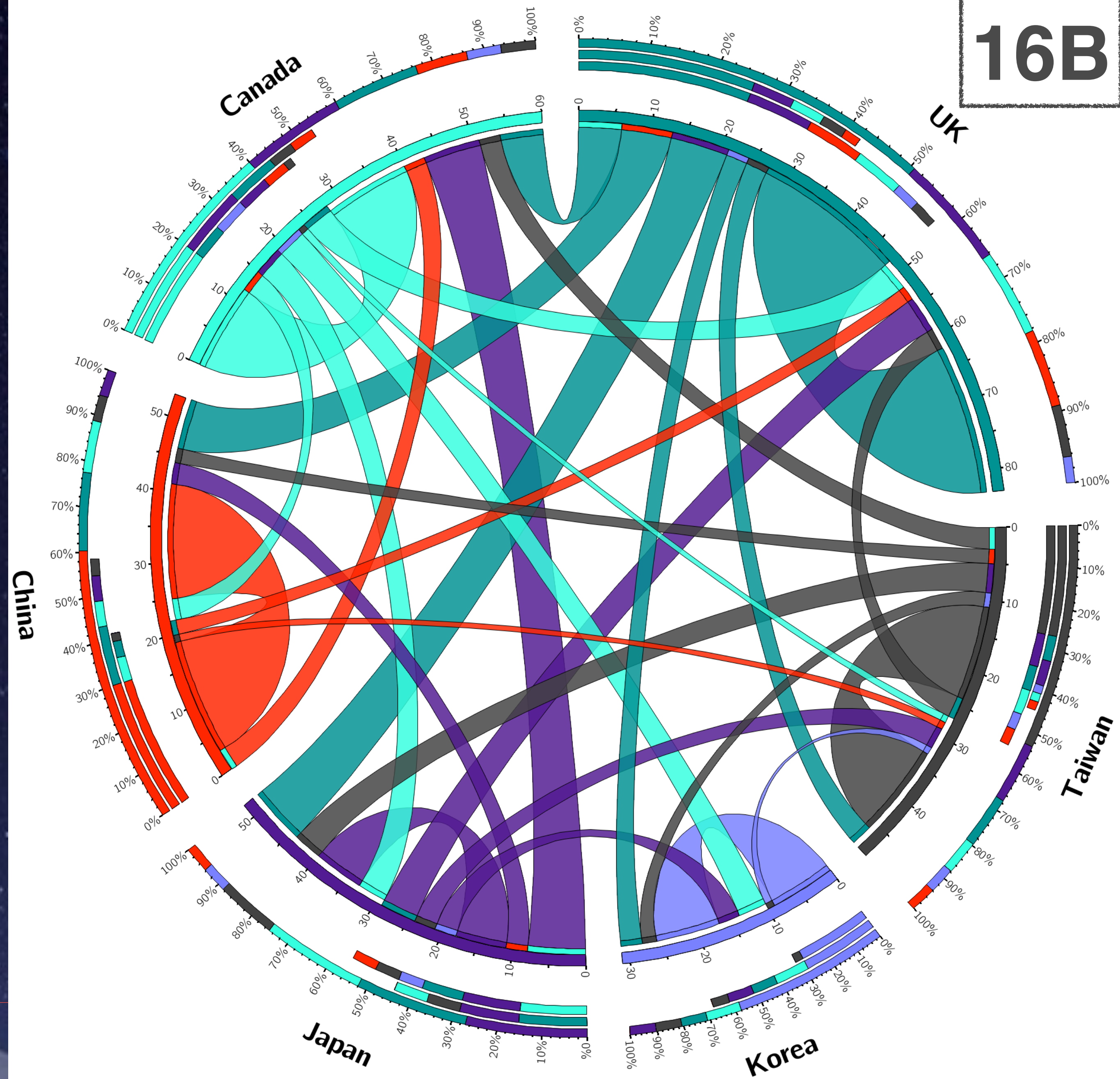


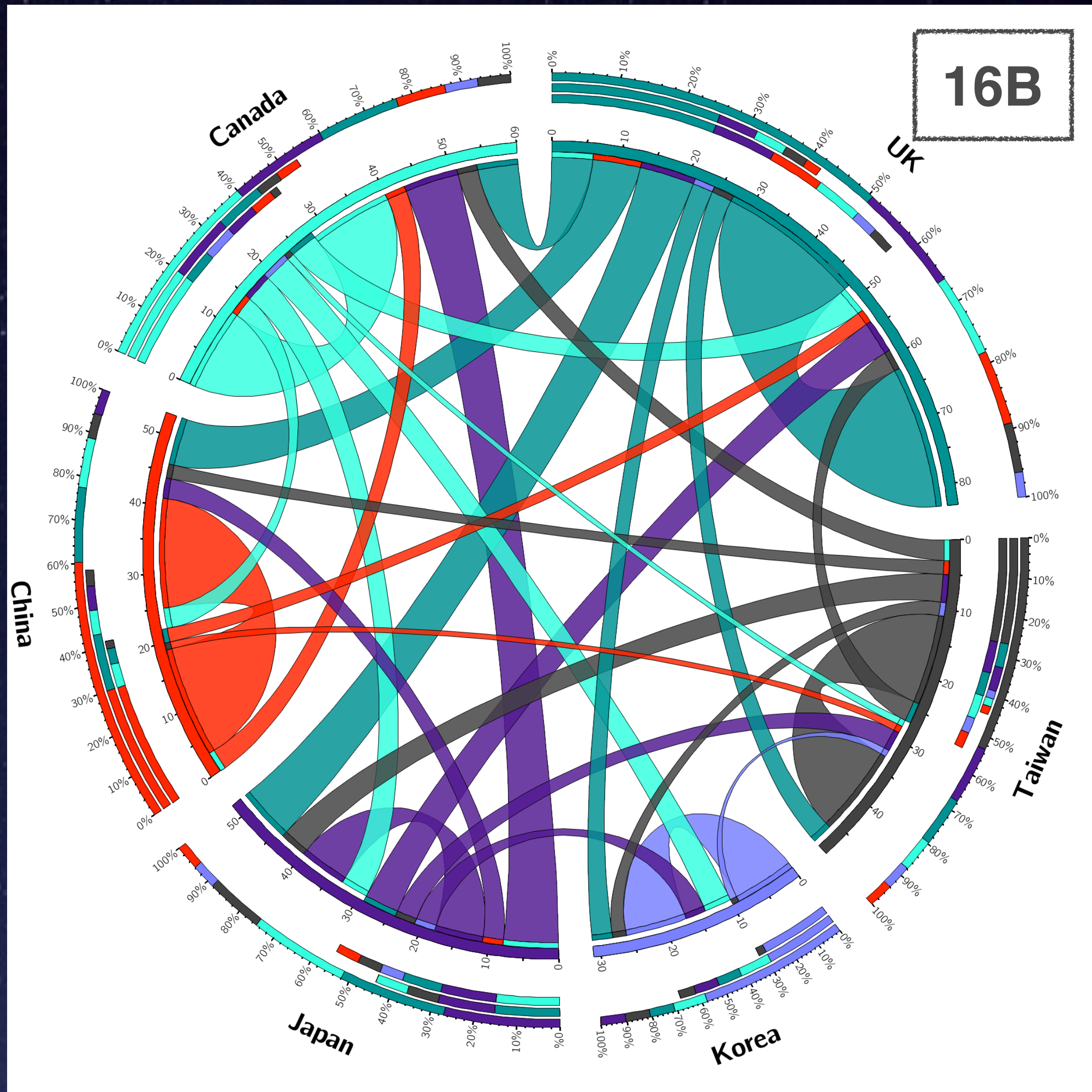
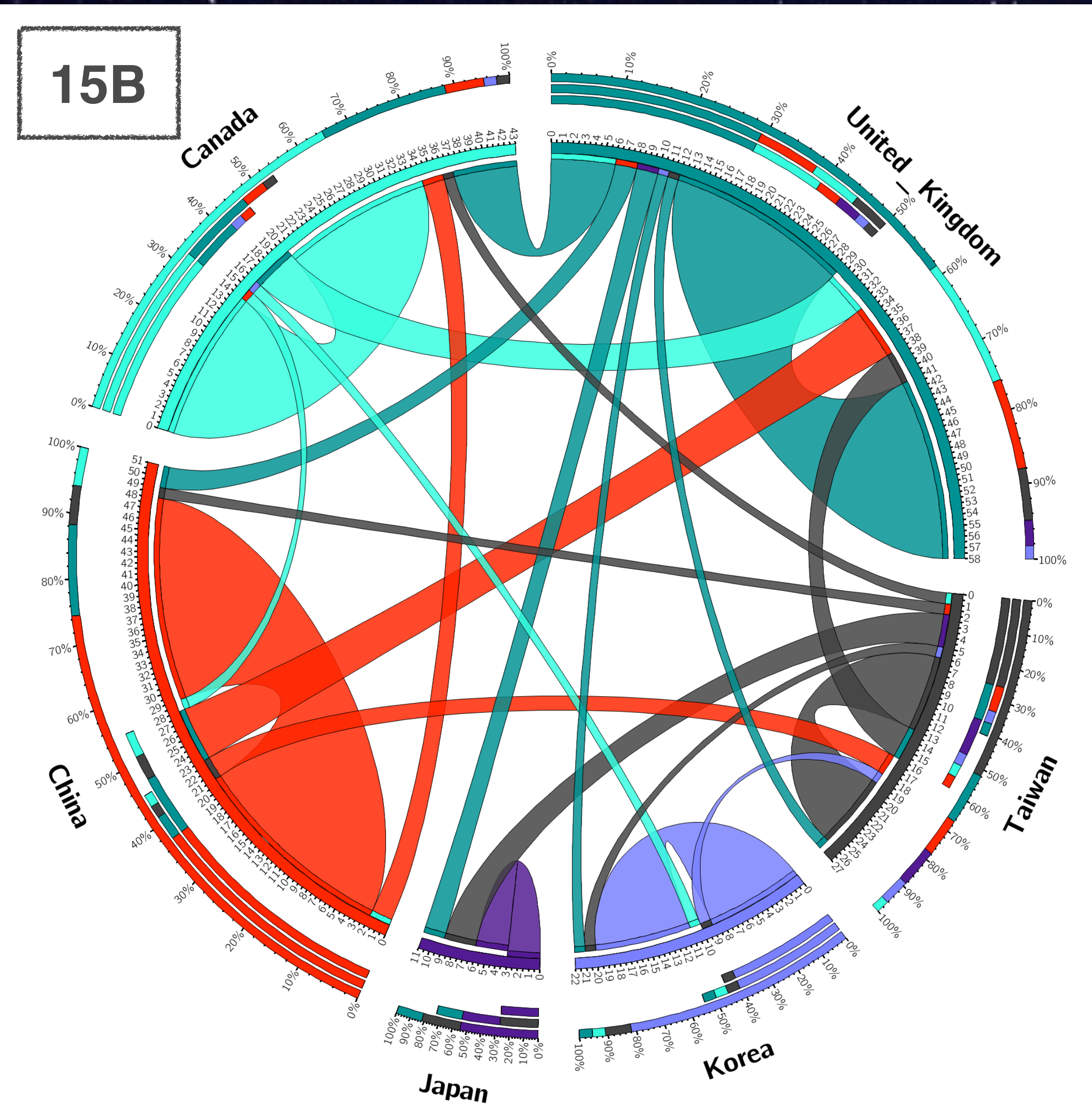
15B



Ribbon shows collaboration
Colour = PI region
Width = # of investigators
Arc length = total # investigators

16B





Chord diagram software:
<http://mkweb.bcgsc.ca/tableviewer/>

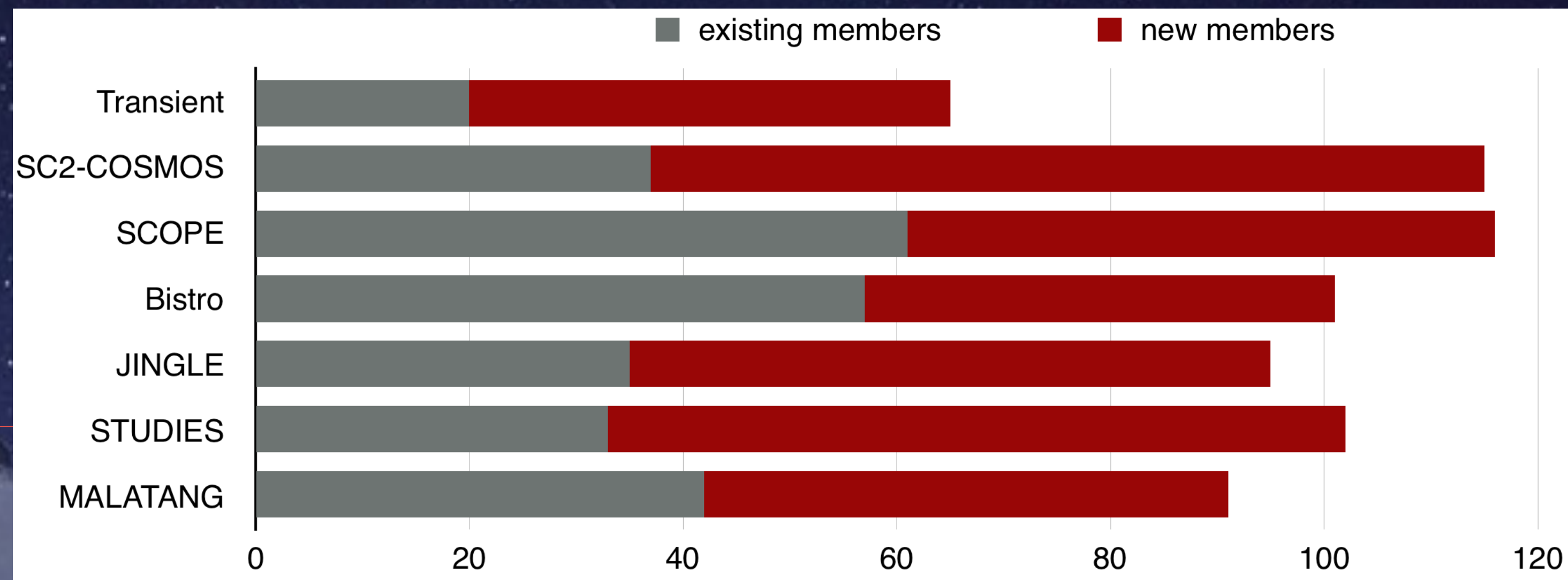
LESSONS LEARNED FROM LARGE PROGRAMS

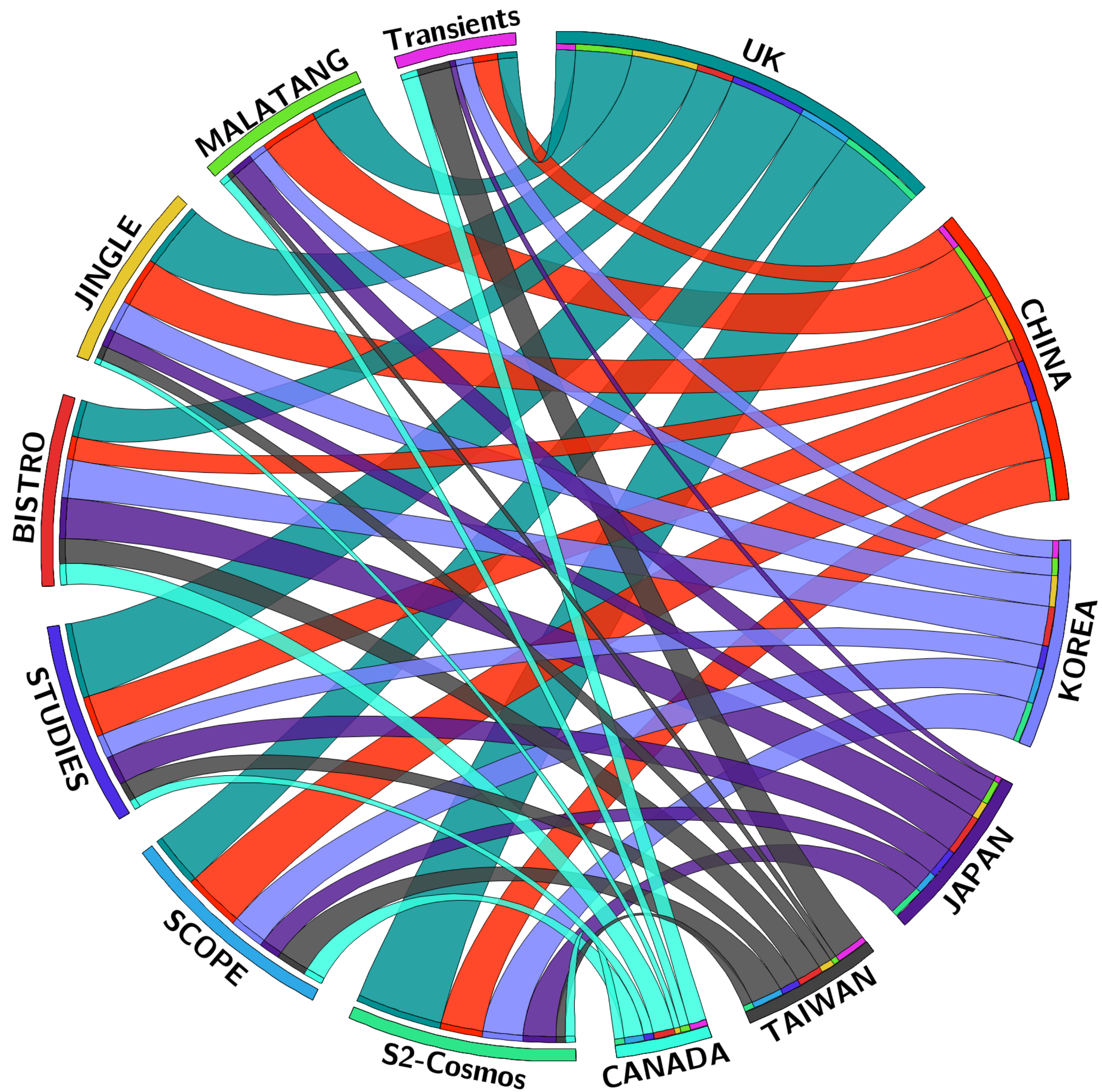
- The UKIRT UKIDSS survey was incredibly successful - UKIRT continues to be one of the top publication-producing telescopes on Maunakea
- JCMT sought to engage with the JCMT Legacy Programs in the same way - 6 large 5-year projects
- As of now, we are yet to see the same returns - why?
- UKIDSS was perhaps unique - highly useful across a range of science, easy archival access
- Review of the Legacy Programs showed that lack of easily accessed (or understood) data products, and lack of accountability by the PIs meant that we had no way of ensuring productivity
- We sought to change this with the EAO Large Programs



JCMT LARGE PROGRAMS

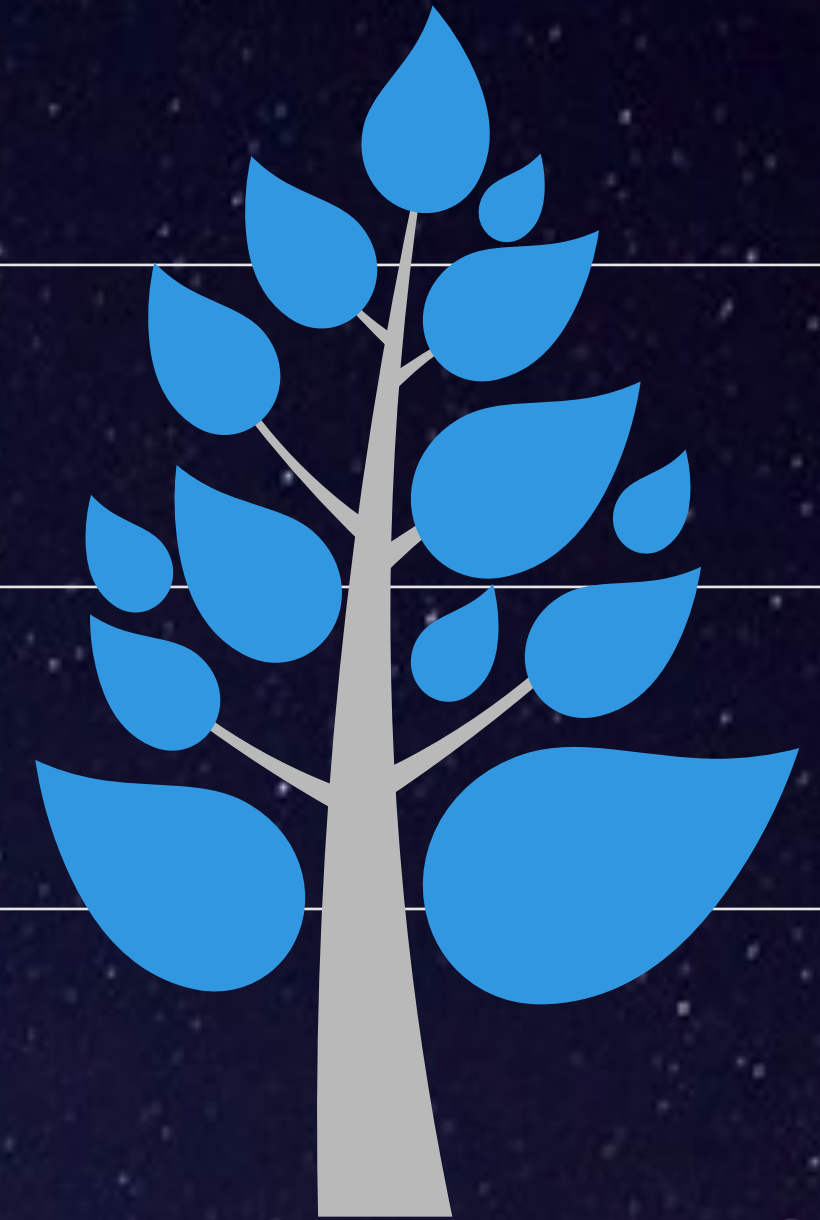
- Requirements for consideration included demonstration of interest and active collaboration from at least two EAO regions
- After successful programs were awarded time a period of 'open enrollment' allowed any EAO regional astronomer to sign up as a participant in any Large Program
- Additionally, PIs from each region must be selected
- A mid-term review is required in order to demonstrate adherence to their publication plan, with the TAC and finally Board, able to rescind further time allocations if performance is not good enough





- Over 700 astronomers from six regions involved in 7 programs
- Regional participation is roughly proportional to community size (with Canada and Taiwan punching well above their weight)

TIMELINE FOR EAO



1. 2015 - 2016:

- EAO incorporated
- JCMT operations assumed
- JCMT Instrument upgrades begin
- JCMT joins EHT

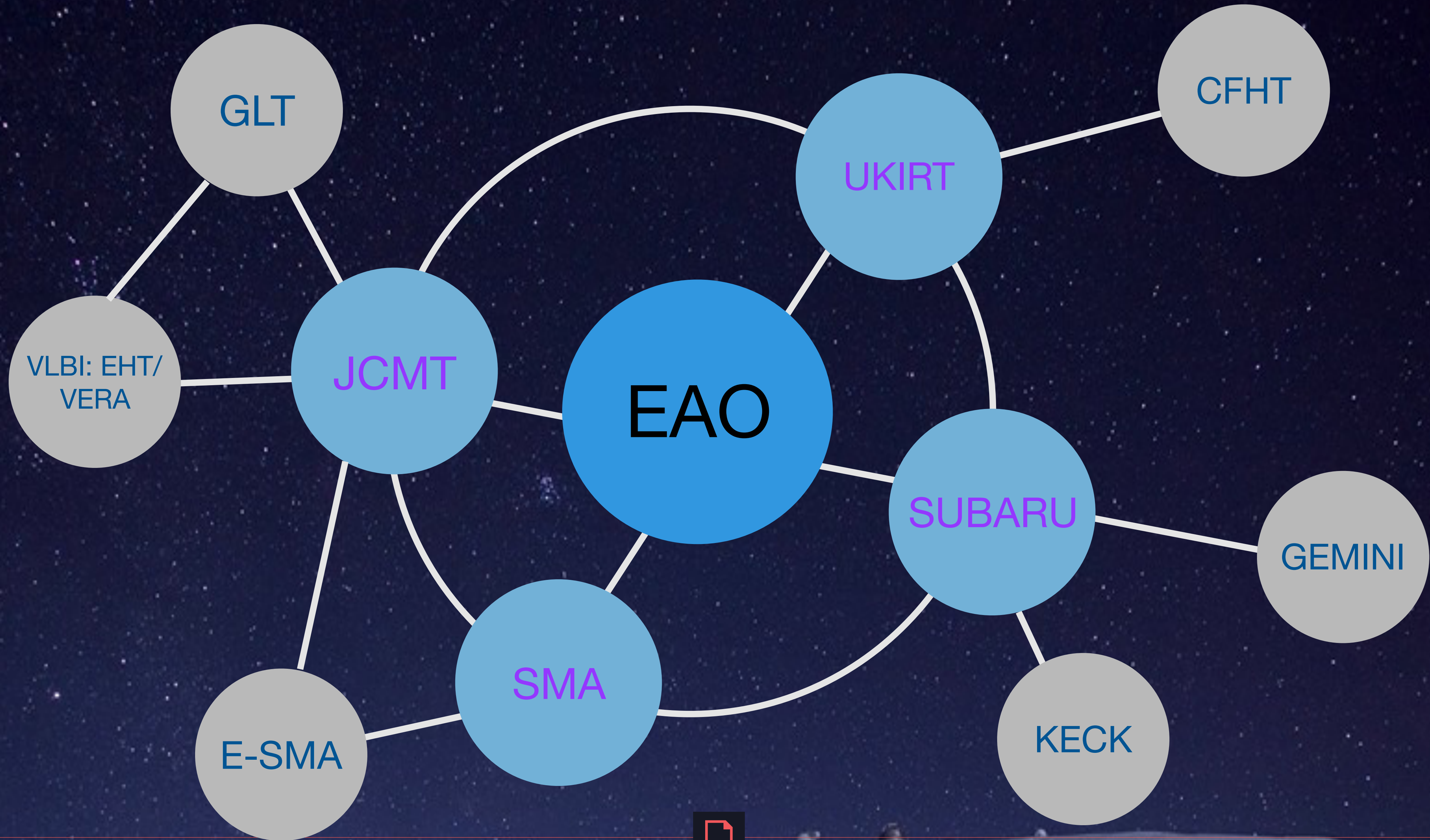
2. 2017

- Access to 17A/17B Subaru time
- Access to 17A/17B SMA time
- EHT and standalone VLBI

3. 2018...

- UKIRT operational partner?
- Full Partnership with Subaru?





EAO TIME AT SUBARU

- 3 nights of DDT in semesters 17A and 17B
- Strong interest - 17 proposals, over 21 nights time requested
- Assessed by Subaru TAC
- 2 projects awarded time in 17A
- EAO regional astronomers - including Japanese investigators - were encouraged to collaborate
- Open access enrollment to successful projects for all regional astronomers



EAST ASIA—JAPAN COLLABORATIONS



- Hardware contributions to ALMA: EA FEIC and now band-1 receivers under construction
- Korea now working on ASTE receiver systems and FPGA spectrometer
- Optical hardware contributions: Taiwan delivered filter exchanger for HSC, and metrology camera and PFI for PFS
- Korean contribution to ALMA
- EACOA fellows at NAOJ: Kenneth Wong, Quang Nguyen-Luong, Ken Chen, Yasuhiro Hasegawa
- Software support for Subaru (from ASIAA, under discussion)
- Chinese participation in TMT, PFS



SUBARU PARTNERSHIP

- Subaru has a bright future and powerful scientific impact potential
- Why would international partnerships be good for Subaru?
- New Users are like Detectors: the more you have, the more (and better) science you can do!
- If you had a strong new Japanese University or Institute willing to provide funds, scientists, instruments and staff: how would you approach integrating them into your Observatory and community?
- The most successful (and long-lived) partnerships focussed on integrating new users/partners into their community: if they can contribute on every level to your operation, you will see greater returns - far greater than the value added from funding contributions alone

