KIYOSHI MASUI
SEARCHING FOR EXTRAGALACTIC RADIO FLASHES WITH DIGITAL TELESCOPES
TRIUMF
SATURDAY MORNING LECTURE
SEPTEMBER 30, 2017

ARTWORK: JINGCHUAN YU, BEIJING PLANETARIUM
First observation of pulses from CR 1919
28 November 1967
1 Å = 100,000 fm
Back to the flash seen at Parkes in 2007

WHAT MAKES IT SPECIAL?
DISPERSION
TIME DELAY

DISPERSION IN RADIO PULSARS
Afterglow Light Pattern 380,000 yrs.

Dark Ages

Development of Galaxies, Planets, etc.

Dark Energy Accelerated Expansion

Inflation

Quantum Fluctuations

1st Stars about 400 million yrs.

Big Bang Expansion

13.7 billion years
SO WHERE DO THEY COME FROM?
STAR QUAKES

Credit: NASA's Goddard Space Flight Center/S. Wiessinger
MOVING FORWARD

NEW CLUES
Chromatic aberration
HARD TO PINPOINT
NEW TELESCOPES

THE FUTURE
CURRENT GENERATION

WHAT LIMITS THESE?
NEW TECHNOLOGY
WHAT HAS CHANGED
CANADIAN HYDROGEN INTENSITY MAPPING EXPERIMENT

CHIME
IN OUR BACK YARD

AN FRB FINDING MACHINE