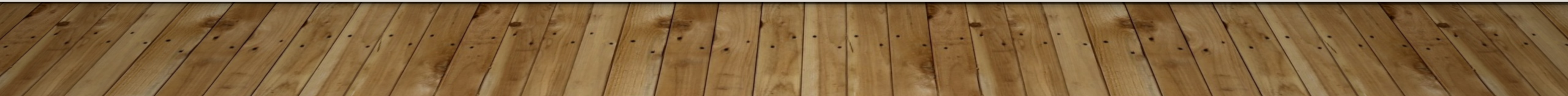


THE DARKEST PLACE IN USA

2019 AUGUST

SANGKYUN KIM



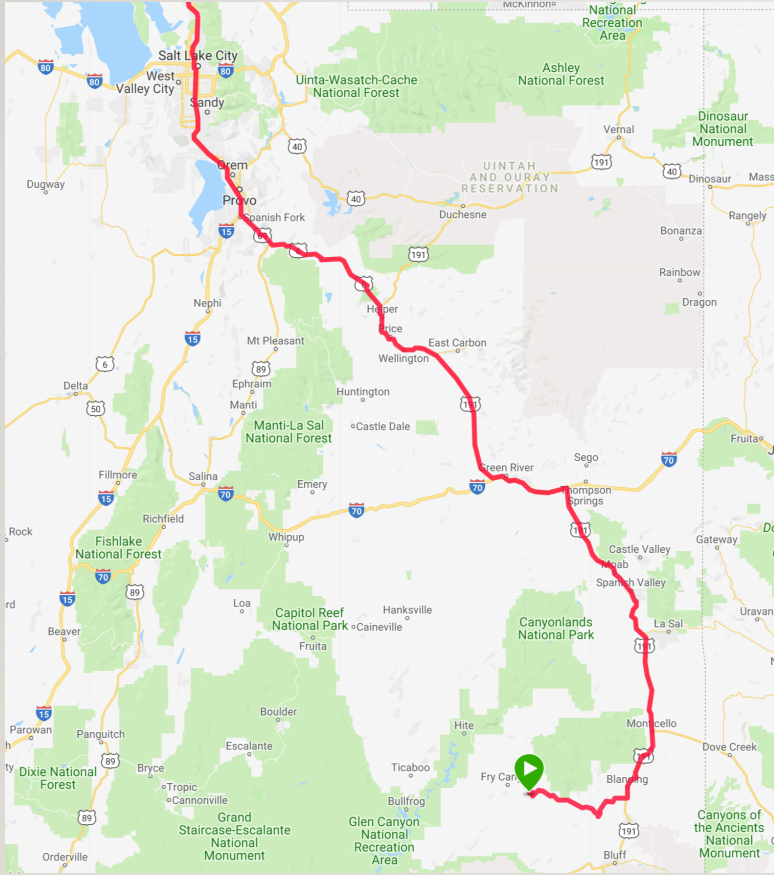
NATURAL BRIDGES NATIONAL MONUMENT

- U.S. National Monument located in southern area of Utah state
- Bridge shapes geology from the huge process of erosion(wind, running water)



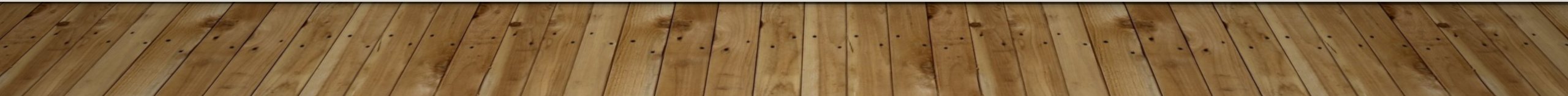
WAY TO THE PLACE

- Driving car for 4 – 5 hours from Salt Lake City
- Blue sky, White cloud, Red land and Road



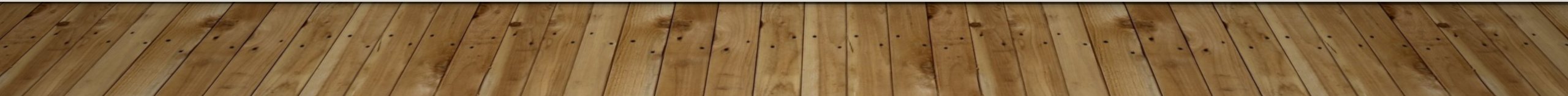
WAY TO THE PLACE

- Long road and interesting landscape
-



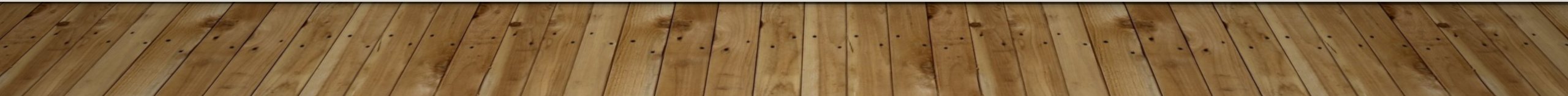
DAY TIME OF NATURAL BRIDGES NATIONAL MONUMENT

- Place for hiking and outdoor activity
-



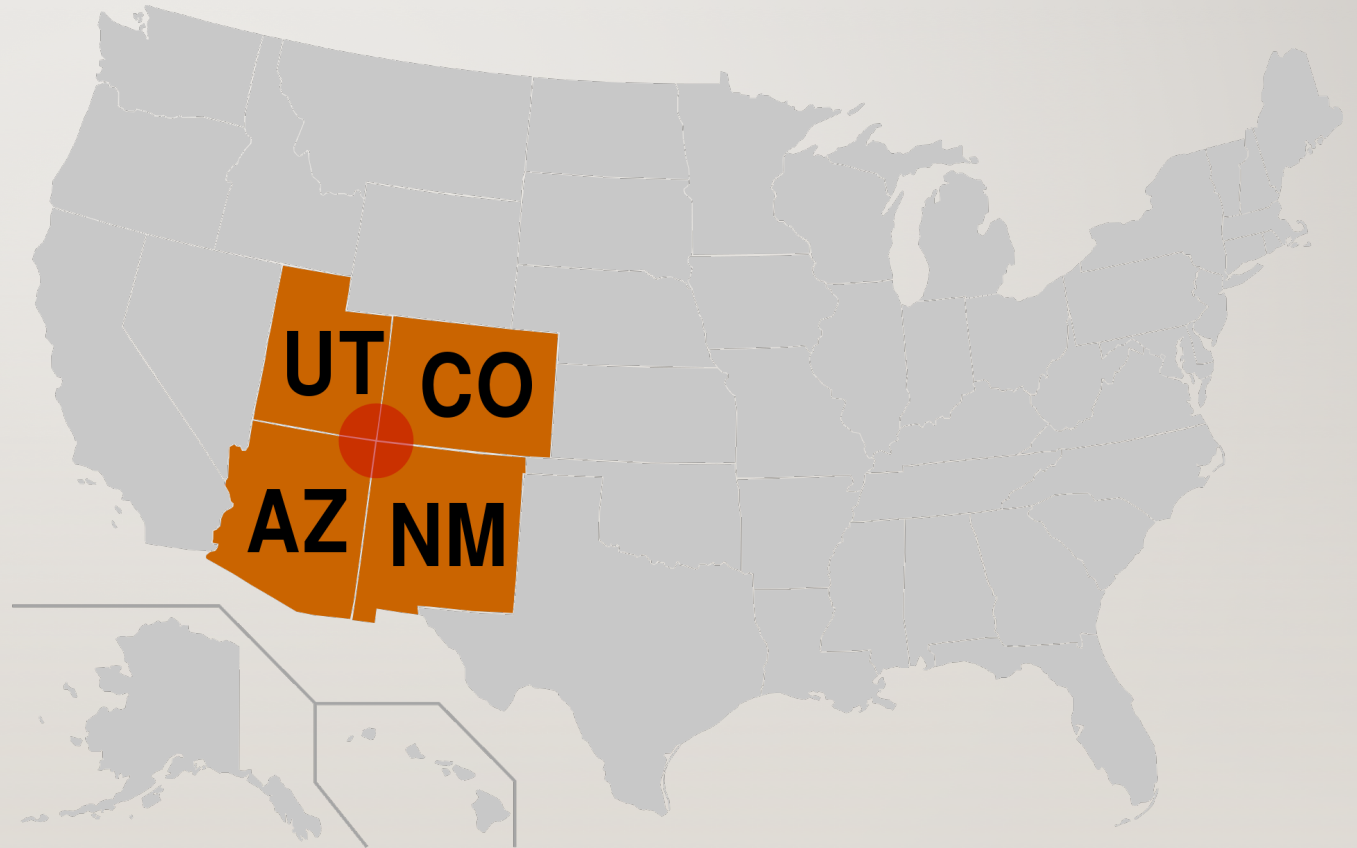
BRING YOUR WATER

- Very dry place, and enough water is really important
-



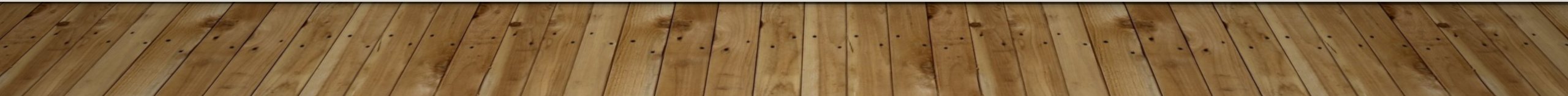
FOUR CORNERS

- Corner of Utah, Arizona, New Mexico, Colorado



STEP ON FOUR STATES

- Driving to the monument of Four Corners
 - Visit four states at the same time, paying 5USD...
-



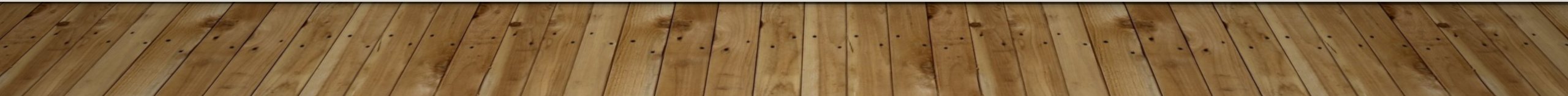
FOUR CORNERS

- People are busy to take photos



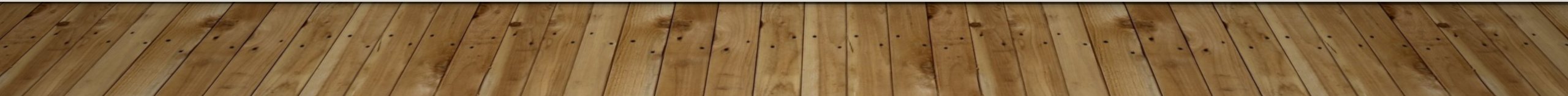
NIGHT OF NATURAL BRIDGES NATIONAL MONUMENT

- There is nothing there... Really dark...
-



STAR, STAR, AND GALAXY

- You can see galaxy with naked eye

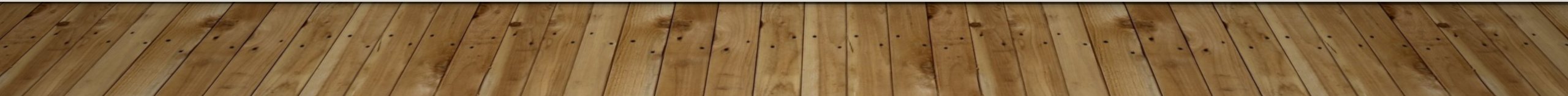
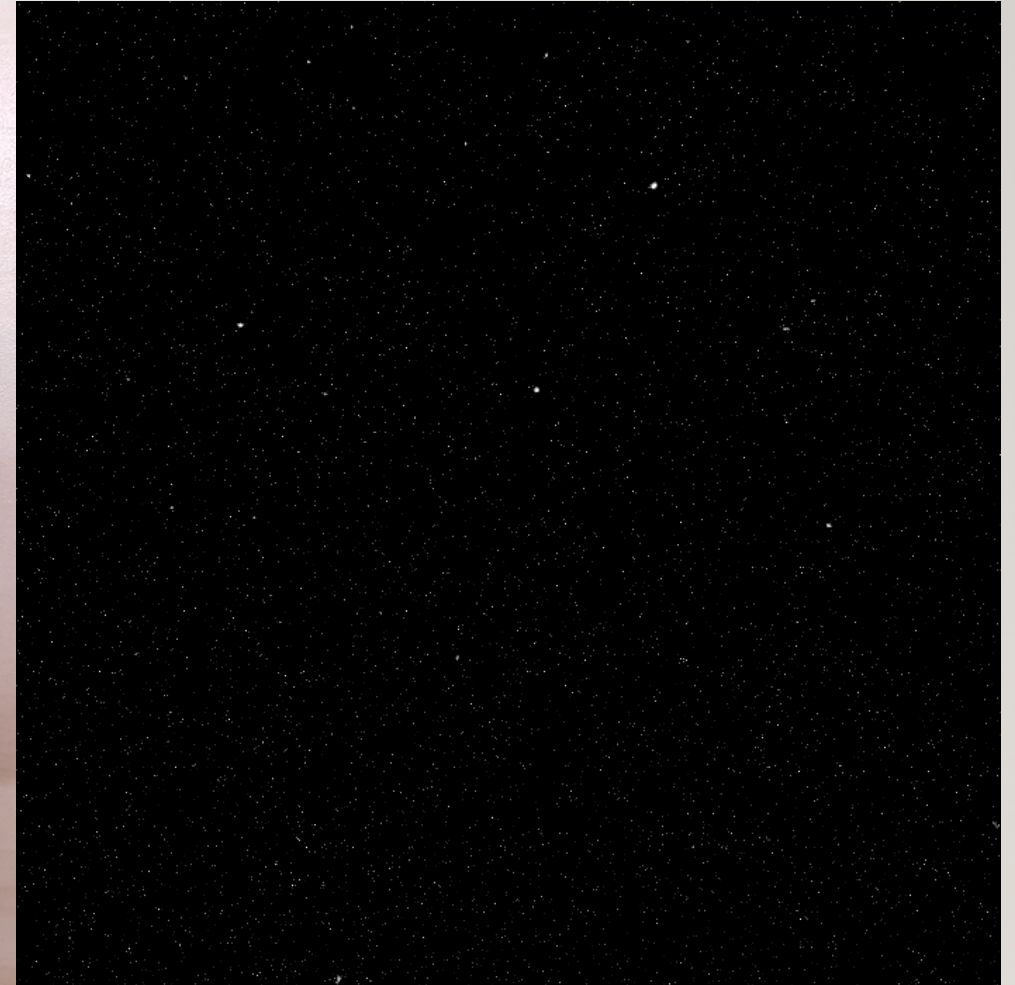
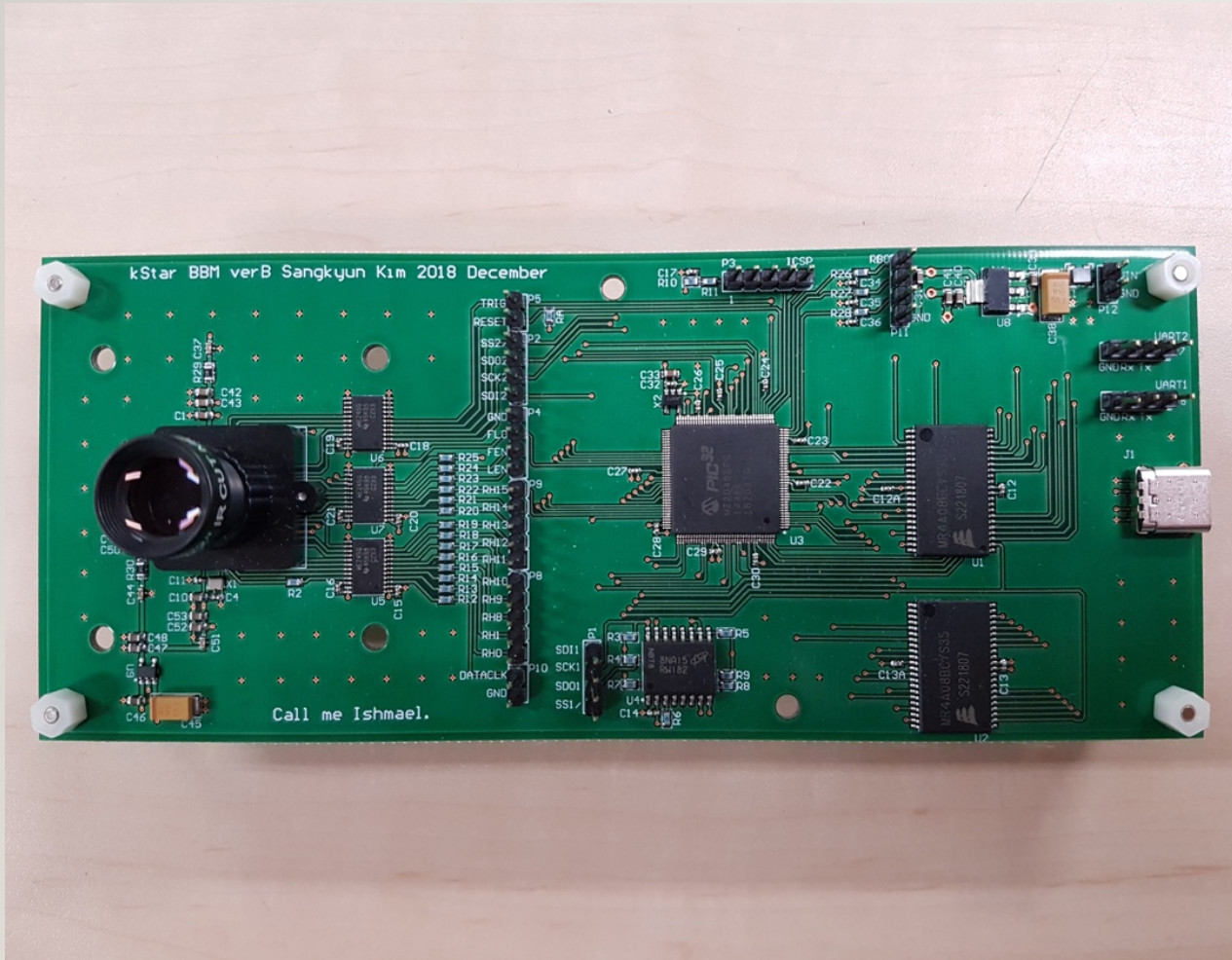


TIME LAPSE VIDEO OF GALAXY



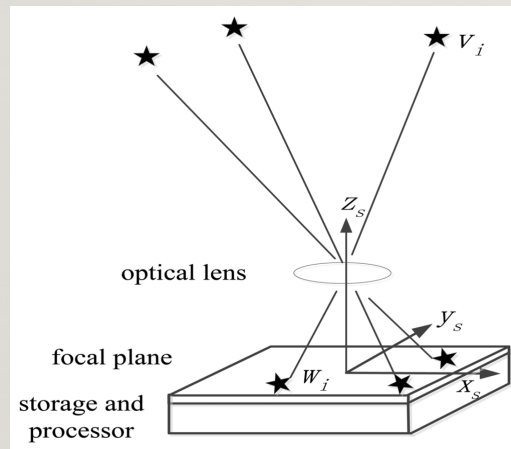
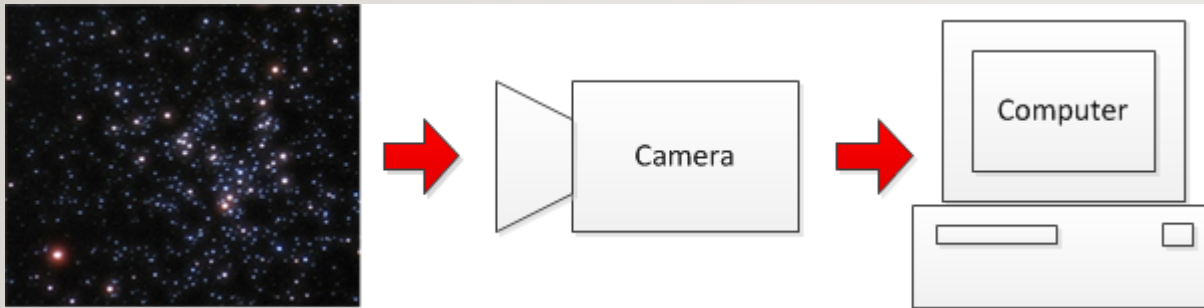
BEST PLACE FOR STT TEST

- Dark, Dry, High altitude

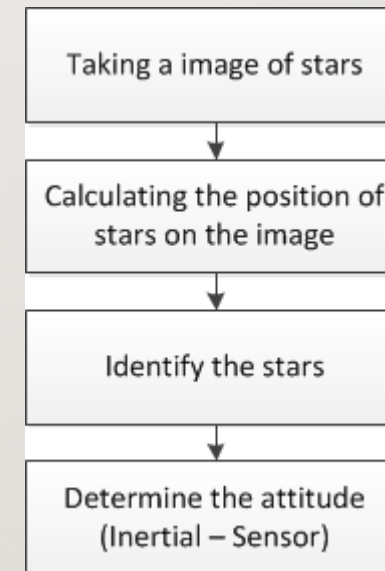


STARS GIVE ATTITUDE

- Navigators have used stars from long long time ago
- The most accurate attitude sensor



© MDPI



Camera

Centroiding of star images

Star identification algorithm

Attitude determination

STT TEST IN THE DARKEST PLACE

- Close to the orbit condition for the star images
 - Image acquisition parameter were tuned
-

