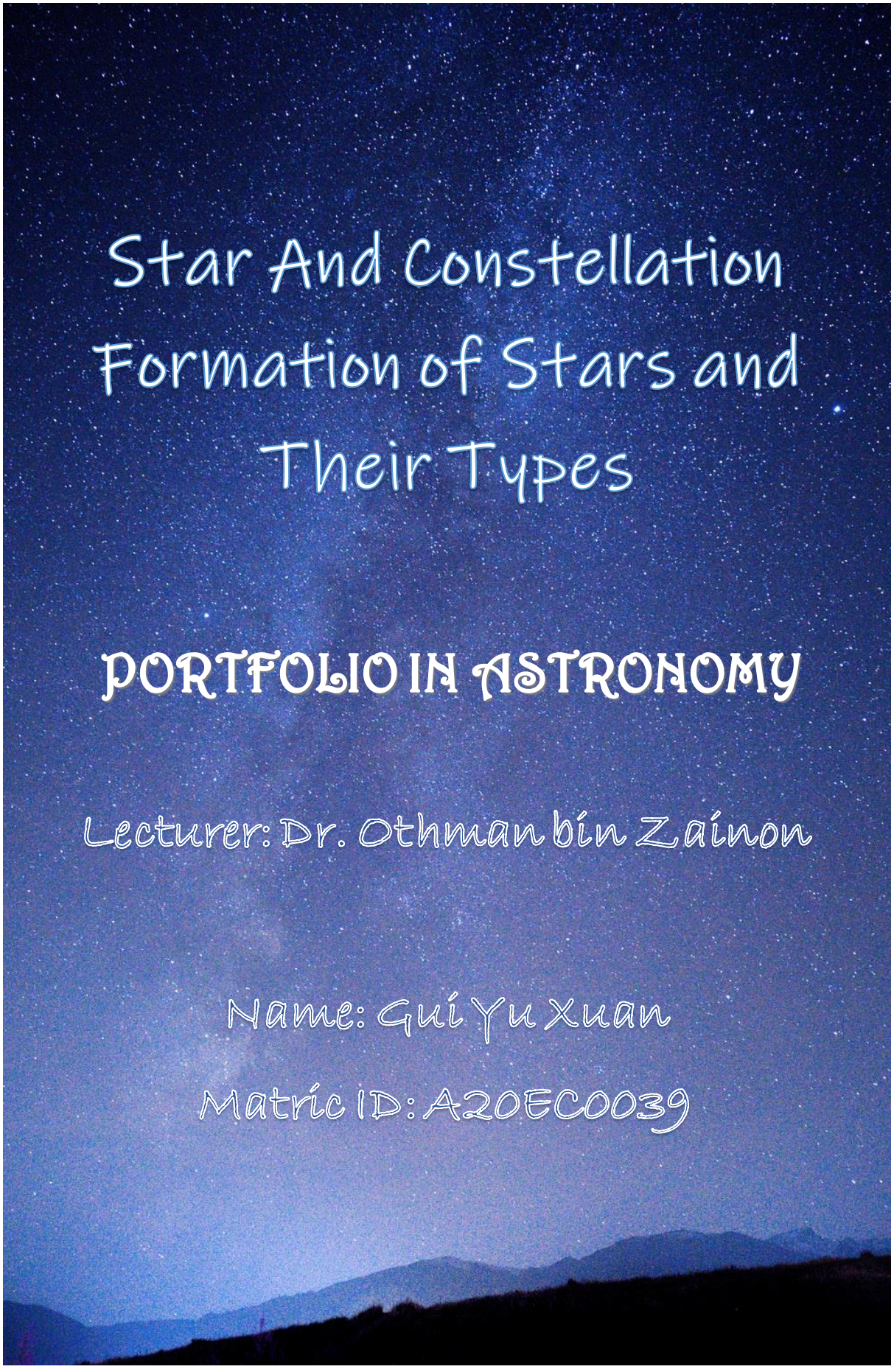

Star And Constellation Formation of Stars and Their Types

PORTFOLIO IN ASTRONOMY

Lecturer: Dr. Othman bin Zainon

Name: Gui Yu Xuan

Matric ID: A20EC0039

What is Stars ?

- A star is a dense substance that will produce heat and light. [1]
- Star is formed by collapsing of giant molecular cloud. [3]
- Massive temperature and density
  - fusion of hydrogen and helium occurs [1]
  - most of hydrogen has been process, star leave main sequence to formed giant star. [2]
- Main sequence
  - Phase of star's life
- Interstellar medium is the space between the stars. [2]
  - Contain gas, dust, radiation, gravitational and magnetic field. [2]
- Sun is the closest star to Earth. [3]

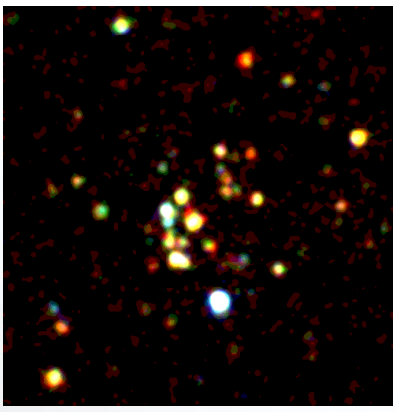

Figure 1: X-Ray image of Star

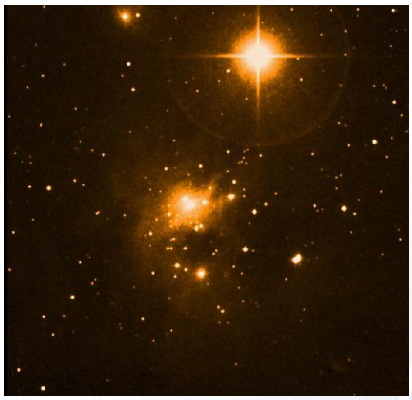

Figure 2: Optical Image of Star

Characteristics of Stars

1. Brightness
    a. Luminosity
        i. Amount of radiation of star [8]
        ii. Determine by size and surface temperature of the stars. [8]
    b. Magnitude
        i. The brightness of stars perceived [8]
        ii. Size and distance [8]
2. Colour and Surface Temperature
    a. Colours depend on surface temperature. [8]

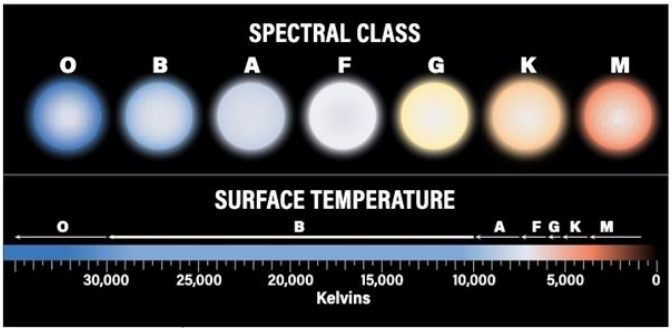

Figure 3: Colour of star based on the surface temperature [4]

What is Constellation?

- The pattern of the stars calls Constellation. [5]
- Latin words “Stella” refers as star. [5]
- Constellation could help people to find the ways. [5]
- Constellation formed when a group of bright stars which close to each other. [6]
- Divided into two groups
    - Circumpolar: stars and constellation would not rise and set [7]
    - Seasonal stars and constellation: stars and constellation appear as seasonal due to the rotation of Earth. [7]

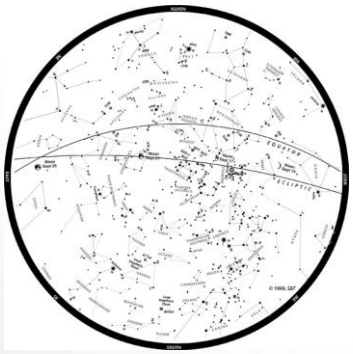

Figure 4: Southern Hemisphere

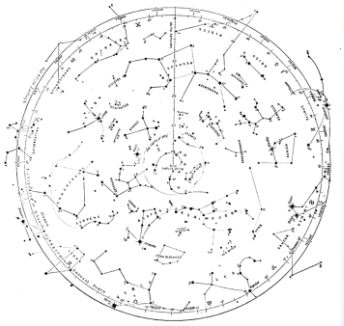

Figure 5: Northern Hemisphere

Constellation

- How constellation named?
  - Ancient Middle Eastern, Greek, and Roman cultures. [9]
  - Identifies as gods, animals etc. [9]
- Constellation divide to
  - Ancient
    - 50 ancient constellations [9]
  - Modern
    - 38 modern constellations [9]
- Stars in a constellation is far apart with each other.
  - Stars in constellation is in different distance from Earth. [9].
  - Some stars are far away with each other's.
- Which stars are part of constellation?
  - Only the stars that easily seen by eye [9]
  - Only the brightest stars

Figure 6: Ancient Northern Constellations

Figure 7: Modern Constellations

Zodiac

1. The stars that fall on ecliptic. [9]
2. 12 Astrological Constellations
    a. Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpius, Sagittarius, Capricornus, Aquarius, and Pisces
3. Determine the time

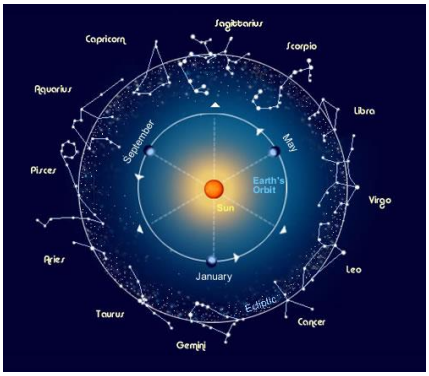

Figure 8: Zodiac

Aries

1. Latin: Ram [10]
2. First sign of Zodiac [10]
3. Period: March 21 – April 19 [10]
4. 3 hours right ascension and 20˚ north declination [10]

Figure 9: Aries

Taurus

1. Latin: Bull [11]
2. Second sign of the zodiac [11]
3. Period: April 20 – May 20 [11]
4. 4 hours 20 minutes right ascension and 16˚ north declination [11]

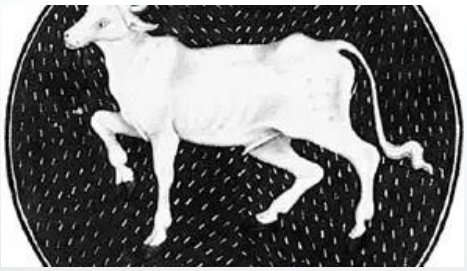

Figure 10: Taurus

Gemini

1. Latin: Twins [12]
2. Third sign of Zodiac [12]
3. Period: May 21 – June 21 [12]
4. 7 hours right ascension and 22˚ north declination [12]

Figure 11: Gemini

Cancer

1. Latin: Crab [13]
2. Fourth sign of the zodiac [13]
3. Period: June 22 – July 22 [13]
4. 8 hours 25 minutes right ascension and 20˚ north declination [13]

Figure 12: Cancer

Leo

1. Latin: Lion [14]
2. Fifth sign of Zodiac [14]
3. Period: July 23 – August 22 [14]
4. 10 hours 30 minutes right ascension and 15˚ north declination [14]

Figure 13: Leo

Virgo

1. Latin: Virgin [15]
2. Sixth sign of the zodiac [15]
3. Period: August 23 – September 22 [15]
4. 13 hours right ascension and 2˚ south declination [15]

Figure 14: Virgo

Libra

1. Latin: Balance [16]
2. Seventh sign of Zodiac [16]
3. Period: September 22 – October 23 [16]
4. 15 hours 30 minutes right ascension and 15˚ south declination [16]

Figure 15: Libra

Scorpius

1. Latin: Scorpion [17]
2. Eighth sign of the zodiac [17]
3. Period: October 24 – November 21 [17]
4. 16 hours 30 minutes right ascension and 30˚ south declination [17]

Figure 16: Scorpius

Sagittarius

1. Latin: Archer [18]
2. Nineth sign of Zodiac [18]
3. Period: November 22 – December 23 [18]
4. 19 hours right ascension and 25˚ south declination [18]

Figure 17: Sagittarius

Capricornus

1. Latin: Goat horned [19]
2. Tenth sign of the zodiac [19]
3. Period: December 22 – January 19 [19]
4. 21 hours right ascension and 20˚ south declination [19]

Figure 18: Capricornus

Aquarius

1. Latin: Water Bearer [20]
2. Eleventh sign of Zodiac [20]
3. Period: January 20 – February 18 [20]
4. 22 hours right ascension and 10˚ south declination [20]

Figure 19: Aquarius

Pisces

1. Latin: Fishes [21]
2. Twelfth sign of the zodiac [21]
3. Period: February 19 – March 20 [21]
4. 1 hour right ascension and 15˚ north declination [21]

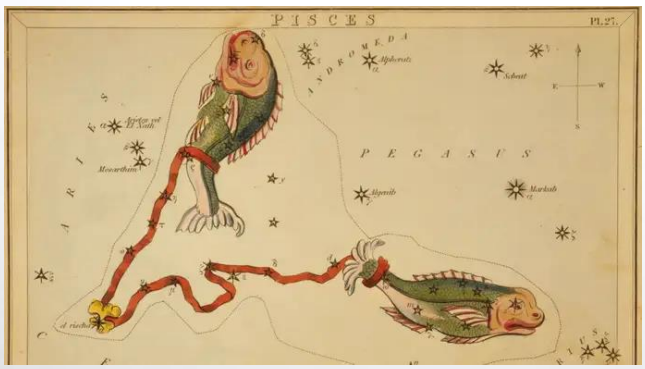

Figure 20: Pisces

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