

## **Three types of calendar in the world**

——**Factors which influence their choice?**

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### **I. Introduction**

There are three types of calendar in our world: Solar Calendar, Lunar Calendar and Lunisolar Calendar. They were designed for particular purposes and different reasons in ages ago. Even know most of the area accepted and used Western system calendar nowadays, but we can see some areas, countries still keep their old and wisdom calendar systems in the modern time.

We want to know the main factors influencing people to choose calendar systems, and focus on how different between three types of people , the area who follow the system, does there have directly relation between the living conditions and system choosing?

## II. Astronomy's definition: three types of calendar

### A. Solar Calendar ( 陽 曆 、 公 曆 )

It is a calendar designed by the relationship between the earth and the sun. Solar Calendar take a tropical year<sup>1</sup> (回歸年) as a year. One tropical year is 365.2422 days (365 days 5 hours 48 minutes and 46 seconds), if accumulate 4 times, it is equal one day, every four years plus one day on February.

### B. Lunar Calendar ( 陰 曆 、 太 陰 曆 )

Lunar calendar is based on a circle of moon, we call a Lunar month<sup>2</sup> (朔望月). A Lunar month takes 29 days 12 hours 44 minutes and 3 seconds, to make thing easier, big month has 30 days, and small one has 29days. 12 lunar months equal 354 days, and complete year<sup>3</sup>( leap year, 閏年) has 355 days, there has 11 days shorter than a tropical year, so maybe 17 years later, the people who use Lunar calendar need to celebrate their Spring Festival in the fall. Now, Islam use this calendar system.

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<sup>1</sup> **Tropical year or Solar year** is the time it takes the earth to go around the sun once.

<sup>2</sup> **Lunar month** is the average time between one new moon and the next.

<sup>3</sup> 閏年 in normal translations is leap year, bissextile or Intercalary year, but in this report, we use the

J.B. and I.M. reference book's version.

C. Lunisolar Calendar ( 陰陽曆、夏曆、after 1970 農曆 )

Lunisolar calendar is also based on the Lunar month, it takes 12 months as a year (354.3667 days, almost 355 days), and Lunisolar calendar system not only takes lunar part but also to place importance on solar one. Lunisolar calendar put a complete month every three year, makes the length as long as a tropical year. Now, Chinese use this calendar system in some time.

### III. The places that use three types of calendar

Three places we chosen are the main area which use three types of calendar most. The examples are The West especially Europe, The Arab World and China, there are stand for Solar Calendar system, Lunar calendar system and Lunisolar one. Now, we make a short view on each geography, agriculture and religious factors as following:

#### A. Solar Calendar system: The West

The West we called is nowadays Europe, the weather in here is belong to Mediterranean climate(地中海型氣候), the Crop growing season and the rainy season are not marching, so they just plant some plants of dehydration tolerance. The food is not enough for people daily lives, so they need to feed some animals or to hunting.

## **B. Lunar calendar system: The Arab World**

The Arab World including West Asia and North Africa area, it is hard to develop agriculture, because The Arab world's topography and weather conditions are not allow a well crop growing. The most special character in this area is religious, Islam is believed for most of residents.

## **C. Lunisolar calendar system: China**

Ancient China has developed a highly agricultural economy. China has some congenital conditions for planting, for examples, China has soft soil and powerful, typical monsoon climate. High temperature and rain season in the marching time, it's a beneficial condition for agricultural development.

# **IV. A guest to different systems**

## **A. Lifestyle**

The factor that The West chose Solar Calendar system is their lifestyle.

Because of their Mediterranean climate, their agricultural system cannot afford all residents daily life, they need to hunt animals or find nature resources outside. So the people here took Sun as an important role, the light can lead them to keep their

life, and this is why The West chose Solar Calendar system.

## **B. Worship**

The Arab World has a particular religious: Islam. We find lots of countries national flag in The Arab World has moon and star elements. We think there has a relation between calendar system and religious. Islam daily religious rites is Salat, they need to do it toward firm direction every times, stars are a good way for fixed position, so residents take care of night, so they chose Lunar calendar system as their main calendar,

## **C. Agricultural patterns**

China has many congenital conditions to develop abundant agricultural economy, so Chinese thought sun is an important role for daily life, at the same time, our rainy season and planting season have its routine, it is fit for the moon circulation, so Chinese took both to choose.

**D. reference**

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