

Ancient Chinese Astrology: Its Characteristics and Influences on Chinese Thought

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古代中國의 占星學

——그 特性和 中國思想에 대한 影響——

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要 約

歷史上에, 특히 古代史에 있어서 占星學의 思想이 인간의 마음을 支配한 정도는 東西洋을 막론하고 놀란 만한 것으로 일찌기 많은 저명한 學者들에 의하여 지적되어 왔다. 이 논문은 中國 古代占星學의 性格을 밝히고, 또한 그것이 中國天文學의 發展樣相에, 그리고 더 나아가서는 中國古代思想의 形成에 미친 影響을 알아보는 데 그 目的이 있다. 한마디로 古代의 天文學은 그 자체가 占星學이었다 해도 과언이 아닐 정도로, 占星學의 目的은 中國天文學의 特性을 규정지었으며, 占星學의 思想은 바로 中國 古代의 宇宙論, 哲學, 儒敎敎理, 政治思想 등의 基本原理를 이루고 있다 하겠다.

西洋世界의 占星學: 그리스 세계에 소개되기 전의 바빌로니아의 占星學은 결코 人間 個人의 運命을 점치는 것 (Horoscopic Astrology)이 아닌, 國事, 戰爭의 可能性, 농사의 풍·흉작 등을 관측된 天文현상을 기초로 하여 예측하려는 一般占星學(Portent Astrology)이었다. 그러던 것이 일찍부터 民主主義의 政治體制를 발전시켰던 그리스에서는 기원전 2세기에 “占星學의 民主化”가 이루어졌으니, 그것은 出生時의 七行星, 太陽, 달, 水星, 金星, 火星, 木星, 土星의 계산된 위치에 의존하여 個人의 一生을 占치는 horoscope의 탄생이었던 것이다.

헬레니즘時代 (B.C. 320-20)의 占星學은 플라톤主義 등 당대의 哲學體系들과 思想的 相通性을 보여 주고 있다. 예로서 플라톤 (B.C. 428-348)의 著作 *Timaios*에는 七行星의 神들이 하늘나라로부터 내려오는 등의 이야기가 있어 후에 *Timaios*는 占星家들의 指針書가 되었다. 그리스의 天文學을 集大成한 기원 후 2세기의 天文學者 프톨레마이오스는 그의 두번째 大作으로 *Tetrabiblos*라는 占星學에 관한 책을 내놓았다. 후의 西洋占星學의 古典이 된 이 저서는 프톨레마이오스의 占星學에 대한 見解를 잘 반영하고 있는데, 그는 占星學은 科學體系를 갖추고 있다고 확신하였던 것이다. 그는 地界—天界 二分體系인 아리스토텔레스 (B.C. 384-322)의 宇宙理論을 채택하여, 第五元素인 aither로 되어 있는 天體는 끊임없이 어떤 힘을 발산하여 四元素 물, 불, 흙, 공기로 되어 있는 地界에 변화를 일으키고 있다고 주장하였다.

기원후 몇세기 동안 로마時代를 風靡하던 占星學은 기독교라는 뜻하지 않은 強敵을 만난다. 初期 기독교를 대표하는 神學者 聖아우구스티누스 (A.D. 354-430)는 神이 인간에게 自由意志를 부여하였으므로 그의 지는 오직 神에게만 종속될 뿐, 별들의 힘에 지배될 수는 없다고 주장하여 占星學의 決定論的 이론을 배

적하였다. 그러나 그의 占星學에 대한 반대는 限界性을 내포하고 있었으니, 만일 악마(demon)의 힘을 빌린다면 占星學의 인 예측이 가능하다는 것이었다. 이로써 기독교의 강력한 반발도 점성학의 基本假說을 깨지는 못하였다. 中世末까지 莫強한 영향력을 行使했던 아리스토텔레스의 宇宙觀과, 악마의 힘이 宇宙에 充滿하여 있다는 기독교인의 믿음은 결국 별들의 地界에 대한 영향력을 인정하는 결과를 낳았다. 비록 별들이 인간의 自由意志를 지배할 수는 없고, 그러므로 個人占星學을 否定은 하였지만, 12세기 이후 後期中世의 敎父들이 공통적으로 가진 의견은 aither로 되어 있는 天體가 四元素로된 地上에 미치는 힘을 인정하는 것이었다.

참으로 占星學의 思想은 近代에 이르기까지 西洋世界를 風靡하였다. 그러나 西洋占星學의 性格과 영향의 度는 中國의 그것과는 틀렸다. 그것은 中國의 다른 政治體制와 宗教敎理에 기인한다.

古代中國의 天文學 및 占星學: 中國天文學의 주요 관심은 曆法의 改定에 있었다. 中國은 殷王朝(B. C. 16-11세기) 때부터 太陰太陽曆을 만들어 썼는데 기원전 4세기 중엽에는 四分曆이라는 曆體系가 확립되었다. 이때부터의 中國의 曆은 그 內容에 있어서 西洋의 것과는 달랐다. 그것은 단지 달(月)과 날(日)을 순서대로 나열하여 24小季節을 계산하는 등으로는 끝나지 않았다. 中國의 역에는 태양, 달, 그리고 五行星 水星, 金星, 火星, 木星, 土星의 각각 다른 움직임과 公轉周期가 계산되어 기록되어 있었다. 즉 中國의 曆體系는 오늘의 天體位置推算曆과 같은 것을 포함하고 있었던 것이다. 그러면 날과 달의 계산이 主目的인 曆에 이러한 要素는 왜 필요한가? 여기에 中國의 曆體系가 지니는 占星學의 목적을 우리는 보는 것이다. 天界의 七行星이 恒星과 별자리의 사이를 움직여 갈 적에 그들의 만남과 헤어짐은 여러가지 形勢를 만들어 내는데 이 行星들의 여러가지 배열이 地上에서의 陰陽五行의 變화를 의미하는 것으로, 이 변화가 地上의 皇帝와 百姓들에게 좋고 나쁜 영향을 가져온다고 中國인은 믿었다. 그러므로 태양, 달, 五行星의 움직임과 이들이 만들어 내는 수학적인 配置는 주의깊게 관측되어야 했고, 또 行星들의 운동의 어떠한 규칙성도 기록되어야만 했다. 이렇게 해서 天體의 운동의 基本法則들이 발견된 후에는 恒星들에 대한 七行星의 未來의 分布가 예측가능하게 된다. 결국 中國曆의 主目的은 回轉하는 行星들의 周期와 규칙성에 의거한 수학적 계산에 의해서 이들 태양, 달, 五行星의 미래의 상태를 예측하는 것이었다. 특히 기원전 1세기부터 日食의 周期性이 알려진 후로는 七行星의 위치의 계산과 日食과 月食의 예측이 中國曆의 主目標이 되었다. 七行星의 位置를 표시하기 위한 背後“경계표”로서 中國인은 二十八宿(Lunar Mansions)를 사용하였던 바, 이는 西洋인이 十二宮(Zodiacal Sign)을 사용한 것과는 대조적이다. 二十八宿는 달이 恒星 사이를 27여일에一周할에서 나온 것이다.

農耕社會인 中國에서 달의 朔望周期를 한달로 하고 1년을 $365\frac{1}{4}$ 일로 하는 太陰太陽曆은 閏月插入에 의한 조정의 필요성이 따랐고, 이는 계절의 정확한 측정을 不可能케 하여, 農事의 목적에는 대단히 불편하였다. 그럼에도 中國인이 20세기초까지 이 太陰太陽曆을 固守한 것은 그 큰 목적이 占星에 있었기 때문이다. 왜냐하면 地上의 사건을 豫知하기 위하여 中國占星學에서는, 달의 位相의 변화가 중요하였다.

漢王朝(B. C. 202 - A. D. 226)가 시작되고서 中國의 曆法은 政治의 重要性을 띠기 시작하였다. 漢初 기원전 100년경에 中國의 皇帝는 天命을 받아 그의 民衆을 다스린다는 思想이 確立되었다. 中國의 皇帝는 하늘의 아들 즉 天子였다. 따라서 그는 天의 뜻을 읽기 위하여는 天體를 세밀히 살펴야만 했다. 그렇게 함으로써 그는 자신이 百姓을 다스릴 德을 갖추고 있는지의 여부를 알 수 있었다. 이때에 曆法은 하늘의 뜻을 읽고 또 그에 따른 善政을 행하기 위한 道具(device)로서 중요한 政治的 의미를 갖게 되었다. 中國曆의 政治的 중요성은 受命改制라는 思想에 그 起源을 가진다. 受命改制란 하늘의 命, 즉 天命에 의하여 새 王朝가 들어섰을 때에는, 天命을 받은 증거로서 몇개의 政府體制를 改革해야 한다는 것이다. 그 개혁 중에서 曆의 개혁은 第一의 것이었다. 漢初以來 새 王朝가 들어설 적마다 曆의 改革은 예외없이 행해졌다. 위에 말한 대로 中國曆의 內容의 특수성으로 인하여 曆의 改革이란 1년의 길이의 改正 등과 함께 당연히 태양, 달 그리고 五行星에 관계되는 基本定數도 고쳐져야만 했다. 中國曆의 主目的이 七行星의 未來의 위치를 계산함으로써 地上에서의 未來의 事件을 치지는 데 있었으므로, 曆은 天意를 살펴서 天命을 보존하기 위한 主方法을 제공하였다. 이러한 맥락에서 지배자가 정확한 曆體系를 保有하는 것은 그가 그의 民衆을 德으로 잘 다스리고 있고 天命이 그와 함께 있음을 의미하는 것이었다.

中國의 傳統的 占星學은 결코 個人的 運命에는 關여하지 않았다. 그것은 서양의 個人占星學에 반대되는 一般占星學이었다. 中國과 같이 政治的 관심이 優先하는 나라에서 天界의 사건은 오직 支配階級과 國家의 事件에만 關여되었다. 中國의 一般占星學이 關여한 것은 叛亂, 도적의 猖獗, 疫病, 기근, 홍수, 地震 등의 國家적 사건이나, 황제, 황후, 宮中高官, 그리고 封建領主가 關여된 政治的 사건이었다. 中國의 宇宙觀은, 하늘과 땅은 하나의 有機的 全體를 構成하여 서로가 相應하는 關係로 얽매어 있었다. 지상세계는 주로 政治的 觀點에서 考아졌기 때문에 하늘의 별들도 宮中高官과 各州의 封建영주의 位階질서를 포함하는 帝國의 구조를 반영하였다.

中國占星學의 構造의 特性과 占法은 歷代王朝 正史의 天文志에 가장 잘 조직적으로 전개되었다. 王朝 正史기록에 있어서 가장 最初의 占星學의 기록은 기원전 90년경에 司馬遷에 의하여 써어진 史記의 天官書이다. 이 天官書가 동시에 古代中國의 天文學과 占星學의 古典을 이루고 있다. 天官書의 內容을 대략 보자. 별과 별자리는 人間사회를 반영한다. 地上의 政治구조는 하늘에 그대로 複寫되었다. 地上에 하나의 정부가 있듯이 天界에도 하나의 國家가 있다고 中國人은 믿었다. 하늘에도 왕좌, 各階級의 宮中官僚, 皇宮, 妾들의 別宮, 王廟, 軍人 등 帝國의 構成에 필요한 모든 것이 있었다. 하늘과 땅은 완전히 서로 같았다. 太陽, 달, 그리고 五行星이 恒星과 별자리의 사이를 여행할 적에 이들은 별자리와의 關係에서 그들의 相對的 位置로서, 또 밝기의 변화로서 여러가지 形세를 만들어낸다. 그러면 이 여러 형세는 類推法의 原則에 의거하여 地上에서의 사건들, 平和와 전쟁, 풍·흉작등을 前兆하는 것이었다. 반대로, 地上의 支配者의 政治的 성공 혹은 실패가 天體에 영향을 미치기도 한다고 天官書는 적고 있다. 司馬遷은 彗星과 여러가지 氣象學의 現象에 대하여도 占星學의 해석을 내리고 있다. 史記의 史官 歷史의 記錄者를 의미함과 동시에 占星官을 의미하기도 한다. 뒤에 이어지는 모든 中國歷代의 正史는 天文志라는 제목 아래 天官書의 內容을 반복하여 실고 있다. 기원전 100년경에 그 體系가 확립된 中國의 占星學의 特性은 그후 1000년 이상을 계속되었다.

中國은 王立天文臺의 설립이 이미 周王朝(B.C. 11세기—8세기)의 初期에 시작된 것으로 알려져 있으나 그 天文臺의 규모나 존속기간은 잘 알려져 있지 않다. 中國 最初의 王朝 正史인 史記의 著者 司馬遷은 B.C. 100년 경 武帝때의 王立天文臺의 臺長을 지냈는데 이 天文臺는 향후 2000년 동안 존속하였다. 이 天文臺에서의 두가지 주요업무가 바로 첫째로, 曆法의 개정되었고, 둘째로, 天體의 관측과 그에 대한 占星學의 해석이었던 것이다. 中國에 있어서 天體에 대한 연구는 다만 王立천문대의 官僚天文學者 兼 占術學者에게만 허락되었으며, 天界의 現象에 대한 해석은 國家機密이었다. 이는 占星學이 가지는 정치적 중요성에 기인한다. 支配者와 王朝가 德을 잃었을 때는 天命은 언제라도 그 皇帝로부터 취소되어 다른 사람에게 갈 수 있었다. 그리고 天은 항상 그의 意志를 별들을 통하여 나타내었다.

中國의 占星學과 儒敎: 前漢의 武帝(B.C. 100년경)는 國家의 理念을 統一키로 작정하여 儒敎를 國敎로 定하였다. 儒敎는 國體論에 그리고 社會질서의 位階論에 깊은 관심을 보이는 特色을 지니고 있다. 儒敎의 經典을 살펴보면 哲學, 倫理, 그리고 政治에 關여하여 많이 논하고 있으며, 이들 主題는 占星學의 思想과 밀접하게 연관되어 논의되고 있음을 발견하게 된다. 政治가 모든 것에 優先하는 中國에서 政治理論을 主題로 하고 있는 儒敎가 國敎로서 中國의 전통을 이어 왔고, 또한 그 儒敎經典이 占星學의 사상으로 澎湃하여 있음을 볼 때 占星學이 儒敎의 政治理論과 밀착하여 中國의 國家理念에, 그리고 中國人의 마음에 미친 영향은 그다지 상상하기 어렵지 않을 것이다.

詩經은 支配者가 天界의 변화에 크게 주의를 기울여야 함을 강조한다. 春秋는 日食, 彗星, 地震 등의 災異를 적고 이를 하늘의 意思表示로서 그의 占星學의 해석을 내리고 있다. 易經은 天이 별들을 통하여 地上의 좋고 나쁜 징조를 보여 준다고 명백히 말한다. 儒敎의 정치이론에 의하면, 中國의 支配者는 天下의 지배자이다. 그는 이 支配權을 하늘(天)로부터 받고 있다. 그러므로 中國의 皇帝는 하늘의 아들, 天子이다. 그가 天命을 받아서 天子가 되면, 하늘의 意志를 따라서 그의 背景을 다스려야 한다. 만일 그가 天의 命令을 背離하면 그나 그의 帝國은 멸망을 면치 못할 것이다. 天은 그의 아들을 訓戒하고 가르치기 위하여 하늘의 별들의 밝기나 움직임을 변화시킨다. 그러므로 天子는 天의 意志를 읽기 위하여 천체를 세밀히 관찰하여야 하는 것이다. 武帝時의 代表的 儒學者 董仲舒는 “天人相關說”을 발전시켰다. 이 설에 의하면 天은 地上의 지배자나 그의 官僚들을 訓戒하거나 또는 그의 의지를 나타내기 위하여 天界의 現象을 바꾸고 있는

한편, 반대로 인간의 옳고 그른 行爲도 역시 天界에 영향을 주고 또 반영된다는 것이다. 天과 인간은 相關關係에 매여 있다. 皇帝는 自然질서와 社會질서 사이의 仲裁者였다.

이렇게 해서 기원전 100년 경부터 占星學의 儒敎의 정치이론은 中國의 全 歷史를 통하여 유지되었고, 이러한 연관으로 占星學의 思想은 실로 오랫동안 中國人의 생각에 莫强한 영향을 행사하게 되었다.

中國의 天文學은 占星學의 목적에 基盤을 두고 그의 特性이 규정되었다. 曆法改正과 매일의 天體관측이 그의 두 주된 테마였다. 天文연구와 관측의 政治的 중요성으로 이의 수행은 朝廷의 王立天文臺의 天文官에게만 허락되었다.

기원전 3세기에 이미 中國에는 中央集權의 官僚體制의 秦帝國이 성립되어 이후 이 體制的 傳統은 歷代中國王朝을 내려오며 계속되었다. 官僚主義專制國家의 官僚는 儒敎主義로 교육받은 學者였다. 漢王朝 이후 儒敎는 中國의 國家의 理念을 제공하는 國敎가 되었다. 儒敎는 政治가 우선하는 中國에서 政治理念을 제공함으로써 中國人의 마음에 심대한 영향을 미쳤다. 儒敎敎理는 占星學의 思想과 뗄 수 없는 밀접한 연관을 가지고 있었다. 中國의 정치이론에 占星學은 必須不可缺의 요소였다.

I. INTRODUCTION.

The great influence of astrological ideas on ancient peoples has been much noted. It is an accepted fact that in ancient days astronomy and astrology were inseparably intertwined, that astronomy was the science which was first studied and systematized by mankind and that the main motivation for observing the heavenly bodies was astrology. The Chinese term "Tien wen" 天文 is now used only to mean "astronomy", but this is a decisive shift in denotation; in classical writings it is ordinarily used in the sense of "portent astrology". To take an example, in the "Wei wen" chapter 藝文志 of *Han Shu*, the Official History of the Han dynasty (202 B.C. - 8 A.D.), the definition of "Tien wen" is as follows: Tien wen is the art by which we observe and calculate the 28 "Lunar Mansions" (Hsiu 宿),¹⁾ compute the movements of the five planets, the sun and the moon, and from these determine the good and the bad portents.²⁾ The major part of the "Tien wen" chapters ("astrological or astronomical sections"), generally included in the Standard Histories, is the observational record of celestial and other natural anomalies astrologically related to political events. Indeed any casual reader turning over the pages of the Astronomical Chapters will be impressed by the vast quantity of astrological matters in their contents. There is a certain similarity in this to the Western tradition, as can be seen when Sarton states,

"...the Pythagorean school was at one and the same time the cradle of mathematical astronomy and the cradle of astrology. The two aspects are apparently incompatible, yet they reappear repeatedly throughout the history of science(at least down to the 17th century). One can not understand the development of ancient and medieval astronomy unless one bears that essential polarity constantly in mind."³⁾

To disregard the astrological side of the development of astronomy would be a disastrous

* 이 논문은 필자가 1980년 인디애나대학 科學史・科學哲學科에 석사학위논문으로 제출, 통과되었던 것에서 일부를 빼어내고 옮긴 것이다.

1) They are the 28 constellations which are identified along the equator. For more explanation see p. 14.

2) Mitsukuni Yoshida, *Hoshi no shukyo* (The Religion of Stars), Kyoto, 1970, p. 184.

3) G. Sarton, *A History of Science*, Oxford University Press, 1953, p. 288.

mistake, for it was a decisive factor in that development. Through studying Chinese astrology, in addition to providing an independent understanding of this subject, I would like to confirm the importance of the role of astrological ideas for the development of ancient science.

Little is known about Babylonian astrology before it was introduced to the Greek World. Babylonian record from the library of King Ashurbanipal (7th century B.C.) show that Babylonian astrology was never concerned with individual human beings unless they were of royal blood, but only with prognostications concerning the affairs of state, the chances of war, the prospects of the harvest, and so on, the predictions of which were based on observed astronomical appearances. The thousands of cuneiform astrological tablets in the museums of Europe, forming the "reports of the Magicians and Astrologers of Nineveh and Babylon", provide no instance of an ancient horoscope drawn up for a private individual.⁴⁾

After Babylonian astrology was passed down to the Greek world it underwent a drastic change, which is called "the democratization" of astrology, occurring in the 2nd century B.C.⁵⁾ The main trend of Hellenistic astrology became the horoscope, which concerns a specific person and depends upon the computed position of the seven celestial bodies at the moment of birth.⁶⁾ It was said that a disciple of the Babylonian astronomer Berossus, who emigrated to Cos in about 280 B.C. was the originator of horoscopes, and that the application of celestial observation to the fates of individuals was begun by exiled Babylonian star-clerks some time in the 2nd century B.C.⁷⁾ In the hands of the Greeks, astrology developed into the intricate science of divination, gaining support from the best philosophical thought of the time: the classic astrological work was compiled by Ptolemy. Although the original impetus for horoscopic astrology came Babylonia as a new development from the old astronomical omens, its actual development must be considered as an important component of Hellenistic science, as Neugebauer asserts.⁸⁾

Hellenistic astrology found many supporters among philosophers.⁹⁾ It developed many points of contact in Platonism and Pythagoreanism. The mystic numbers of Pythagoreanism seemed especially fit for the new science. Platonism was also friendly to astrology; in the *Timaeus* the soul descending from the upper heavens by way of the planetary gods was a source for astrological interpretation, and the *Timaeus* became in later times a veritable breviary for astrologers. In the myth of the *Demiurge*, the world was created as a living organism and every part of it was closely related to every other. Therefore, it provided a basic principle for the Stoics: that man, as a microcosm, merely reflected the great world

4) Joseph Needham, *Science and Civilisation in China*, London: Cambridge University Press, Vol. 2, 1956, p. 351.

5) *Ibid.*, p. 353.

6) O. Neugebauer, *The Exact Science in Antiquity*, Princeton: Princeton University Press, 1952, p. 163.

7) Needham, Vol. 2, p. 353.

8) *Op. cit.*, p. 164.

9) T. O. Wedel, *The Mediaeval Attitude Toward Astrology*, *Yale Studies in English*, Vol. 60, New Haven, 1920, pp. 1 - 2.

around him.

Ptolemy, of the 2nd century A.D., was the first astronomer who paid serious concern to the occult science. His *Tetrabiblos* was prominent among astrological works and became the classic reference for later Western astrologers. It reflects Ptolemy's belief in the validity of astrology and in its scientific character. Ptolemy argues in favor of such prediction by pointing out the influence of the moon upon the ocean, and that of the sun upon the seasons, and asserting that the other heavenly bodies must act in similar manner.¹⁰⁾ According to him a certain force is diffused from the heavens over all things on earth.

The Aristotelian doctrines, which supplied the medieval world system and became the theoretical basis for the acceptance of astrology during the late middle ages, were already used by Ptolemy for his defense of astrology. Ptolemy asserted:

A very few considerations would make it apparent to all that a certain power emanating from the eternal ethereal substance is dispersed through and permeates the whole region about the earth, which throughout is subject to change, since, of the primary sublunar elements, fire and air are encompassed and changed by the motions in the ether, and in turn encompass and change all else, earth and water and the plants and animals therein.¹¹⁾

Aristotle's theory of the four elements—the hot, the cold, the dry, and the moist—constituted the basis of Ptolemy's physics.¹²⁾ Ptolemy placed these four qualities under the influence of the planets and constellations and so explained the manifestations of stellar influence. Ptolemy continued his argument by asserting that if ignorant sailors are able to judge the future weather from the sky, highly trained astronomer should be able to determine its influence on man. However, it is not the case that Ptolemy supported astrology as a whole. Astrology was divided by Ptolemy into two main parts:¹³⁾ 1. That which deals with general predictions regarding war, pestilence, earthquakes, floods, storms, etc.; 2. That which deals with predictions regarding the individual, his parents, brothers length of life, health, riches, profession, marriage, children and friends. Ptolemy asserted that the system of general predictions was the surest part of this science. In practice however, its importance was far less than the prophecy of fates of individuals.¹⁴⁾ The main interest of Western astrology was horoscopic astrology, even though horoscopic divination was not readily accepted by Ptolemy. Ptolemy admitted that the practice of horoscopic astrology was difficult and that it had not yet been brought to the point of perfection; he also criticised impostors who abused the art.¹⁵⁾

During the first centuries of our era, astrology spread everywhere through the Roman world.¹⁶⁾ Emperors welcomed Chaldeans, and the belief in astrological influence on terrestrial

10) Chaudius Ptolemy, *Tetrabiblos*, Edited and translated into English by R.E. Robins. London and Cambridge, Mass.: Loeb Classical Library, 1940, pp. 7 & 9.

11) Ibid., pp. 5-7.

12) Ibid., p. 7.

13) Ibid., p. 119.

14) Ptolemy, pp. 221-229.

15) Ibid., p. 13.

16) F. Cumont, *Astrology and Religion among the Greeks and the Romans*, New York: Putnam, 1912.

matters was universal among the common people. Astrological ideas were in the air.

However, astrology in the Western world did not enjoy a total victory. We find strong enemy of the occult science in Christianity. In the early Christian era, the Christians held that the advent of Jesus had destroyed the power of the astral forces.¹⁷⁾ Therefore, the fatalistic theory of horoscopic astrology that one's fate is decided by the conditions of the stars at one's birth, was nominally ended the stars could no longer influence and control the lives of men. In the early Western Church, the greatest opponent of astrology was Augustine. Augustine maintained that the actions of men are free from the arbitrary rule of the stars and that the free will of human beings endowed by God is subject only to God and nothing else. His argument mainly concerned the horoscope. Concerning the practical aspect of this divinatory system, he singled out the problem of twins, the historic case of Jacob and Esau.¹⁸⁾ He asked how the heavens can be held to account for the enormous difference in the destinies allotted to two children born so nearly at the same time.

Although Augustine firmly denied horoscopic astrology as a false fatalistic science and contended that it is impossible in practice, he was not firmly convinced regarding the possibility of certain astrological predictions. He admitted that certain sidereal influences have some power to cause differences in bodies alone, that the seasons of the year vary as the sun approaches and recedes, that certain things are increased or diminished in size by the waxings and wanings of the moon, such as sea-urchins and oysters. But he denied that the wills of men are subject to the configuration of the stars. And he concluded his argument by accepting the possibility of astrological predictions, if made by the help of demons. In this he simply represented the doctrine of the early Church concerning the powers of demons.

Following Augustine, Christians in general maintained that astrology was the invention of the devil and could be carried on only by the aid of demons. This theory arose early, and remained throughout the Middle Ages the argument of last resort. A belief in the power and prevalence of demons was universal in primitive Christianity. The Western mind failed to disprove the control of nature by the stars. Christian arguments did not deny some sort of control of inferior nature by the motions of the heavenly bodies, and so the basic hypothesis of the occult science was undisturbed.

In the 12th, 13th, and 14th centuries, European learning and culture was nourished by the introduction of the translations of Greek and Arabic science. Translation during these periods constituted one of the true turning points in the history of Western science and intellectual history in general. Of this mass of science and learning, the physical and philosophical works of Aristotle were fundamental. As Edward Grant has asserted, it was the impact of Aristotelian science and subsequent reactions to it that formed the central theme which occupied the late medieval mind.¹⁹⁾

The cosmology and physics of Aristotle played a fundamental role in the theoretical acceptance of astrology by the Church at this time. According to Aristotle the substance of

17) Wedel, p. 18.

18) Wedel, pp. 20-21.

19) Edward Grant, *Physical Science in the Middle Ages*, New York: John Wiley & Sons, 1971, pp. 15-19.

astral bodies did not consist of one of the four elements of this world, nor of a combination of these elements. If it were formed of the elements of this world, it would suffer growth, decay, and dissolution, and the other changes to which earthly things are subject. The substance of the stars consisted of a certain fifth essence. The stars were spherical bodies, transparent, and endowed with a perpetual motion. The motion of the stars was circular, perfect and eternal. The local motion of the imperishable things, the fixed stars, gave the original impetus to the movements of the physical bodies on earth. The motion of heavenly bodies was initiated by the Prime Mover himself and then affected earthly growth and change. Therefore, the earth was connected to the local motions of the heavenly bodies in a necessary way. Now, the motion of the celestial bodies was divided into two kinds, the movement of fixed stars and the movement of planets. The regular motion of fixed stars from east to west governs the principle of permanence and growth. The motion of the wandering seven stars, moving at irregular paces from west to east, constitutes the doctrine of earthly change. Aristotle's cosmology and physics, if they were regarded in terms of astrology, supplied a comprehensive foundation for the belief in stellar influences on the earth.

Under such circumstances, astrology could not easily be ignored. Most of the Church Fathers and scholars reacted very favorably toward astrology in the late middle ages. While reputing the astrological divinations on a personal level and maintaining the superiority and the freedom of human will, they unanimously admitted the existence of stellar influence on terrestrial events and the legitimacy of the method of general prediction. Albert the Great of the 13th century, taking it for granted that the stars govern the material elements on earth, went further to assert that the stars could influence even the soul's actions indirectly, as the latter was dependent upon elemental matter indirectly.²⁰⁾ The employment of astrology for meteorological purposes and medicine was, for Thomas Aquinas, entirely legitimate. Robert Grosseteste of 13th century thought that, as the prediction of individual fate was not certain, only motives and tendencies, rather than necessary events, could be indicated. He added that general predictions can be of great service to the Church itself.²¹⁾ He even devised a mechanism to explain how the heavenly bodies act on inferior bodies; the theory of Light Metaphysics. According to this theory, light, the first corporeal form, extends matter into three dimensions and is the efficient cause of all bodily motions. In his treatise, *De Luce*,²²⁾ he explicitly stated that heavenly bodies act on inferior bodies only by means of their light. Michael Scot, who was employed by the emperor Frederick II as an astrologer, pronounced that there was no incompatibility between his faith in God and belief in astrology.²³⁾ Roger Bacon and Nicole Oresme also did not oppose astrology if it only concerned general events. The Church could more readily tolerate astrological theories that were

20) P.I.H. Naylor, *Astrology*, London: Robert Maxwell, 1967, p. 67.

21) R.C. Dales, "Robert Grosseteste's Views on Astrology," *Medieval Studies*, Vol. 29 (1967), pp. 357-363.

22) English translation by C.C. Riedl, *Robert Grosseteste On Light*, Milwaukee, 1942.

23) R.C. Dales, *The Scientific Achievement of the Middle Ages*, Philadelphia: University of Pennsylvania Press, 1973, pp. 156-158.

not markedly fatalistic because the entire intellectual sphere was permeated with astrological ideas. To reject the astrological world view would have been to reject the whole heritage of classical culture, which had assumed an astrological complexion. Tycho Brahe and Kepler both accepted the astrological idea and world view. During the Renaissance, astrology enjoyed once more a universal reign.²⁴⁾ Otto Neugebauer, mainly referring to Hellenistic astrology, considers the role of astrological theory in the formation of Greek culture:

"To a modern scientist, an ancient astrological treatise appears as mere nonsense. But we must not forget that we must evaluate such doctrines against the contemporary background. To Greek philosophers and astronomers, the universe was a well defined structure of directly related bodies. The concept of predictable influence between these bodies is in principle not at all different from any modern mechanistic theory. And it stands in sharpest contrast to the ideas of either arbitrary rulership of deities or of the possibility of influencing events by magical operations. Compared with the background of religion, magic and mysticism, the fundamental doctrines of astrology are pure science.....To the historian of civilization, astrology is not only one of the significant phenomena of the Hellenistic world but an exceedingly helpful tool for the investigation of the transmission of Hellenistic thought."²⁵⁾

The belief in the general rule of the heavens over the terrestrial world was held by medieval scholars as well as by ancient philosophers. Lynn Thorndyke thinks that the basic astrological idea was the all-inclusive hypothesis that all operations of the inferior world of nature spring from and are controlled by the eternal movement of the incorruptible celestial bodies. The true place of astrology in the history of science was expressed by Thorndyke as follows:

"During the long period of scientific development before Sir Isaac Newton promulgated the universal law of gravitation, there had been generally recognized and accepted another and different universal natural law, which his supplanted. And that universal natural law was astrological."²⁶⁾

"This rule of the heavens should be kept constantly in mind by every student of the history of science before Newton in evaluating any aspect of scientific or, for that matter, human activity. Most critics of what they were pleased to call astrology never questioned this assumption, which was its very basis."²⁷⁾

Of course, both of them, Neugebauer and Thorndyke, came to these conclusions after considering only the occult science of the Western tradition, almost entirely disregarding the Chinese counterpart.

As we turn to Chinese culture, we hear a similar assertion of the vital role of the occult sciences on the formation of ancient Chinese ideas. Tadao Iijima, the great authority on ancient Chinese history and astronomy, asserts that early Chinese history cannot be thorou-

24) See D. C. Allen, *The Star-Crossed Renaissance*, New York: Octagon Books, 1973.

25) Neugebauer, p. 164.

26) Lynn Thorndyke, "The True Place of Astrology in the History of Science," *Isis*, Vol. 46, Part 3 (1955), p. 273.

27) *Ibid.*, p. 275.

ghly understood without the study of astronomy and that Chinese astronomy was itself astrology.²⁸⁾ He claims that astrological ideas constituted the underlying principles of ancient Chinese religion, cosmogony, philosophy and Confucian doctrine. He explicitly announces: "Any scholar who is going to study Chinese history should never forget the field of astrology."²⁹⁾

Indeed astrological ideas permeated the ancient Chinese mind as they did the people of the other great civilizations. However, Chinese astrology was different from its Western counterpart in its character and its influence on Chinese ideas. The astrological influence was much greater and more enduring in Chinese culture. Throughout China's history, politics was paramount among all areas of endeavor; consequently, most of its history saw the maintenance of a powerful centralized despotism. Confucianism was dominant among all the religions and its doctrine supplied the political theory for Chinese despotism. My argument will be that these two factors, the peculiar Chinese political situation and the Confucian political doctrine, account, in part, for the nature and role of Chinese astrology, and in particular, its greater importance for Eastern history than its counterpart had for Western history.

II. EARLY CHINESE ASTRONOMY

Chinese astronomy was built around the calendar. From the time of the Yin dynasty (16th to 11th centuries, B.C.), the Chinese used the luni-solar calendar, which combined both the solar year and lunar month.³⁰⁾ By the mid 4th century B.C., after continuous improvement, a calendar system called Ssufen Calendar 四分曆 was developed.³¹⁾ In this system the cyclic-

28) Iijima, in his voluminous work, (1) *Shina Kodai Shi Ron* (An Ancient Chinese History) tried to fix the antiquity of Chinese astronomy in relation to its astrological character for the purpose of shedding light on Chinese history.

29) Tadao Iijima, (2) *Shina Kodai Shi To Temmon Gaku* (Ancient Chinese History and its Astronomy), Tokyo, 1939, p. 54.

30) This was confirmed by the recent study of Oracle Bone of 14th century B.C. See Kiyoshi Yabuuchi, (1) *Chugoku no Temmon Rekiho* (Chinese Astronomy and Calendrical Art), Tokyo, 1969, p. 3.

31) The issue of when the calendar system was realized in China is controversial. Iijima approached this problem as follows: For the Chinese calendar system, the fixation of the position of the winter solstice and the cyclic period of the sun, moon and Jupiter are its essential constants. Therefore, to compute out the time when these were observed is the key to the problem. First, the position of the winter solstice moves about one degree per 72 years by the law of precession; but in the system it was fixed near β Capricorn. So, the fixation of the position of the winter solstice must have been done at a time when it was near β Capricorn. Second, the two constants in the Ssufen, 365 1/4 and 29 499/940 are bigger than their real values. Therefore, as the difference accumulates, the start of a new moon will be late a day per about 300 years and the winter solstice late a day per about 130 years. So, it must have been the time, when the phenomena of a new moon and the winter solstice coincide best with the indication of the calendar of the phenomena, that the calendar was realized. Third, the correct cyclic period of Jupiter is 11 years and 86, rather than 12 years. This also produces differences between the real position of Jupiter and the indication of the calendar. According to the computation based on the above logic, the position of the winter solstice must have been fixed around 400 B.C. and the cyclic period of the sun and moon some time between 427-352 B.C., and Jupiter between 366-222 B.C. Iijima calculated the time when the calendar and the celestial phenomena coincide most to determine the time of the development of the calendar. See Iijima, (2) pp. 65-66.

period of the sun was $365 \frac{1}{4}$ days, the moon $29 \frac{499}{940}$ days, and Jupiter 12 years. These figures show that the Chinese knew the nineteen year cycle called the Metonic cycle, which intercalated seven months in 19 years, and furthermore knew the 76 year cycle called the Callippus cycle.³²⁾ In other words, the Chinese knew that 19 revolutions of the sun of $365 \frac{1}{4}$ days are equivalent to 235 revolutions of the moon.

The content of the Chinese calendar since its formation in the 4th century B.C. has been different from those of the Western world. It did not merely order the months and days and compute the twenty-four seasons and other yearly events. The different movements and the cyclic periods of the sun, moon and the five planets were also reckoned into the calendar. What was the purpose of all these elements in the counting system? When the sun, moon, and the five planets sail through the fixed stars and constellations, they produce numerous different situations by their meetings (conjunctions, occultations, and apparent contiguities) and by their dispersal. The various arrangements of the seven luminaries were thought to describe exactly in heavenly language the operation of the Yin-Yang and the Five Elements³³⁾ which themselves caused all the happenings on earth and brought bad and good influence on the emperor and the people.³⁴⁾ Therefore the movements of the sun, moon and the five planets and their mathematical configuration had to be watched carefully and any discovered regularity of their movements should be written down.³⁵⁾ After some of the basic laws of celestial motions were discovered in this way, it was possible to predict the future distribution of the seven luminaries among the fixed bodies. The purpose of the Chinese calendar was nothing other than the prediction of the future condition of the seven wandering stars, by mathematical computations based upon the periodicity and the regularity of motion of the revolving planets. Therefore, the Chinese calendar incorporated some of the elements of a modern-day ephemeris. From the 1st century B.C. the fact that solar eclipses are periodical was known, so the computation of the position of the sun, moon and five planets and the prediction of lunar and solar eclipses were the main objects of the Chinese calendar.³⁶⁾

32) Ssufen Calendar means the calendar of one-fourth, adopting $365 \frac{1}{4}$ days as the length of a year. In the Ssufen system 19 years are equated to 235 ($=12 \times 19 + 7$) synodic months, 7 leap months being inserted in each 19 years. Thus the length of a month is given as:

$$365 \frac{1}{4} \times 19 \div 235 = 29 \frac{499}{940} \text{ days.}$$

However, the number of days in 19 years is

$$365 \frac{1}{4} \times 19 = 6,939 \frac{3}{4},$$

and there still remains some fractional part of a day. Thus when we consider one cycle of 76 years, 4 times the 19 years, intercalation can be completed. The luni-solar calendar is composed of short months of 29 days and long month of 30 days. If they are put one after another, the average length of a month will be 29.5 days, and this figure is a little smaller than the length of a synodic month. Hence, it is necessary, from time to time, to put two long months successively. The way to put two successive long months can also be accomplished when the calendar is based upon the 76-year cycle. In other words, the order in which long months come in succession, can be determined uniquely for 76 years. From Yabuuchi, (3), pp. 445-446.

33) The explanation on the Yin-Yang and Five Elements Theory will be given on p. 19.

34) Iijima, (2), p. 58.

35) Ibid.

36) Kiyoshi Yabuuchi, (2) *Chugoku no Kagaku Bummei* (Science and Civilization of China), Tokyo 1970, p. 39.

To express the celestial position of the sun, moon, and the five planets one need some "landmarks" to which the seven luminaries can be related geographically. The Chinese used 28 "lunar mansions" for this purpose, instead of the 12 zodiacal signs of Western astrology. The moon travels around the the heavens in a little more than 27 days, and so the heavens were divided into 28 sections of constellations starting from the winter solstice, and these constellations were called the 28 HSIU (Lunar Mansions, or Houses of the Moon). This division was an important factor for the perfection of calendar, at a time when people did not know the degrees of the armillary sphere.³⁷⁾ Each of the 28 HSIU had its own astronomical meaning³⁸⁾ and by considering the positions of the seven wanderers within the HSIU, the portents of the day were prognosticated.

In an agricultural society like China the luni-solar calendar was extremely impractical; nevertheless, the Chinese retained the system until modern times. It was basically a lunar calendar with solar adjustments: i.e., each month began with the new moon, and the year had twelve full lunar months. The intercalation of a full month somewhere in the year made this type of calendar unusable for the farmer, because the beginning of the year or the beginning of any single month could oscillate within the limits of a full lunar month. Therefore, for agricultural purpose, the Chinese relied upon basic signs of nature, such as the return of migratory birds, or the appearance of a large fixed star, rather than upon the calendar.³⁹⁾ The fact that the Chinese retained the luni-solar calendar until the early twentieth century clearly indicated that their purpose was different. And this different purpose was, in fact, an astrological one, for in Chinese astrology, the phase of moon was important for prognosticating earthly events as well as for the popular festivals and observances of religious cults. Sivin, the authority on Chinese mathematical astronomy, points out: "The form in which the calendrical art was transmitted was decisively conditioned, as in ancient Mesopotamia, by the importance of astrology to the security of the state."⁴⁰⁾

From the time of the Han dynasty (B.C. 202 - A.D. 226), the Chinese calendar assumed political importance. In early Han times (100 B.C.), the idea that the emperor rules over his people with the Mandate of Heaven⁴¹⁾ was firmly established. The emperor of China was the Son of Heaven, and consequently he was expected to watch the heavenly bodies carefully to read the will of Heaven. By doing so, he could also know whether or not he was virtuous enough to govern his people. At this time the calendar came to possess a very important political meaning⁴²⁾, as a device for reading the will of Heaven and so governing

37) Armillary sphere in China was known around the end of 2nd century B.C. See Yabuuchi's argument on this in his (2), p. 12.

38) For the explanation of each HSIU, see Mitsukuni Yoshida's *Hoshi No Shukyo* (The Religion of Stars), pp. 216-220.

39) W. Eberhard, "The Political Function of Astronomy and Astronomers in Han China", *Chinese Thought and Institution* (ed. J.K. Fairbank), 1957, p. 63.

40) N. Sivin, *Cosmos and Computation in Early Chinese Mathematical Astronomy*, Leiden: E.J. Brill, 1969, p. 5.

41) This will be discussed more in Chapter IV.

42) Yabuuchi supplies fully the ideological background on why Chinese calendar was given such a political importance, in his (1), pp. 21-45.

correctly. The political importance of the Chinese calendar had its origin in the idea called SHOU-MING-GAI-JR 受命改制⁴³⁾ which was welcomed by the politicians of Chin dynasty (221-202 B.C.) and established its influence firmly at the early Han times.⁴⁴⁾ The idea was that when a new dynasty was established by the Mandate of Heaven, it should reform several important government systems, as evidence of holding the heavenly mandate. And among those revisions, the reform of the calendar was central. In medieval Europe, the pope anointed the emperor and the authority of the secular ruler was thus established: in somewhat parallel fashion, the Son of Heaven made it clear that he had received the Heavenly Order by reforming systems. Since the early Han, when a new dynasty arose, reformation of the calendar was pursued almost without exception. Because of the content of the Chinese calendar system, the reformation was not so simple as from Julius calendar to the Gregory of 16th century Europe, in which the length of a year was revised and the days of intercalation were reduced. The fundamental constants concerning the sun, moon and five planets had to be changed.

I have argued that the original purpose of the Chinese calendar was to predict future events on earth by computing the future condition of celestial wandering bodies. The calendar provided an essential method of reading the will of Heaven and thereby of keeping the Mandate of Heaven for the ruler possessing the calendar. In this context, for a ruler to have an exact calendrical system meant that he was ruling his people properly and with virtue, and that the Order of Heaven was with him. As a result, a good technique of criticizing a ruler was to find fault with his calendar, as W. Eberhard has argued.⁴⁵⁾ As N. Sivin sums this up:

"Once a system was officially adopted, it became part of the emperor's ritual paraphernalia not simply because a calendar was needed for agriculture, to which the motions of the moon and planets were entirely irrelevant, but even more fundamentally because the ability to predict moved celestial events from the realm of the ominous to that of rhythmic and intelligible. The emperor was thus enabled to know Nature's Tao so that his social order might be kept concordant with it. Failure of the official system to predict was necessarily a sign of moral imperfection, a warning that the monarch's virtue was not adequate to keep him in touch with the celestial rhythms."⁴⁶⁾

Celestial phenomena which could not be predicted were ominous in the truest sense of the word: they were omens. Every solution to a problem of astronomical prediction meant the removal of one more source of political anxiety. Among the unpredicted celestial phenomena, the solar eclipse was held to be the most terrible warning from Heaven to the Son of Heaven and his officials. Thus, one of the main sources of political concern over the Chinese calendar was that an accurate calendar was essential for predicting solar eclipses. From Han times the prediction of solar eclipses was the object of mathematical computat-

43) The origin of the idea of SHOU-MING-GAI-JR 受命改制 will be explained in Chapter IV.

44) Yabuuchi, (1), p. 23.

45) W. Eberhard, p. 40.

46) N. Sivin, p. 7.

ion;⁴⁷⁾ nevertheless, the eclipse of the sun never lost its astrological significance. Nakayama gives two reasons for this: first, the periodicity of lunar eclipses had been discovered before the court ritual had attained a fixed pattern, whereas the periodicity of solar eclipses was not accepted until after these eclipses had come to acquire a definite ritual significance. Second, the prediction of solar eclipses requires considerably more sophisticated techniques than that of lunar eclipses. For this reason early attempts at prediction could not have attained a high rate of success.⁴⁸⁾ Sivin points out the absence of a spherical geometry in Chinese method, which made accurate predictions virtually impossible.⁴⁹⁾ Because of the political importance of the solar eclipse, in the early Standard Histories, observations of solar eclipses were recorded and interpreted in the Imperial Annals or the Treatise on Five-Elements Phenomena and, also, in the Treatise on Astrology.⁵⁰⁾

For the Chinese, the calendar system was a national treasure. One interesting fact is that to heighten the authority of the calendar the Chinese bestowed metaphysical meanings on the fundamental astronomical constants: the constants were related to a specific musical flute and to a specific symbolic number, the latter coming from the Book of Changes.⁵¹⁾ Therefore, on the one hand, the reform of the calendar was necessitated by the practical need for predicting eclipses more accurately, but on the other hand, calendar makers were more interested in incorporating all the symbolic numbers to give the new calendar a mystical authority. This is a reason why the Chinese did not develop an exact calendar notwithstanding the twenty-five times the reforms of the calendar were carried through.

With the idea that a calendar was a symbol of a dynasty, the Chinese asked all of the subordinate nations around China to use its calendar; to adapt to the Chinese system was an expression of submission.⁵²⁾ Similarly, to develop a new calendar was a revolutionary act, committed by persons who had already planned to depose the dynasty. Naturally, the government forbade study of the calendrical art to any persons other than hopefully loyal bureaucrats.⁵³⁾

Beginning about the 4th century B.C. (the Warring State Period; 480-221 B.C.) the Chinese began to pay close attention to the planetary motions. In the Confucian Classic, *Tso*

47) In Tsangtung Calendar compiled in some year between 1-5 A.D., the first complete astronomical table in China, eclipses were computed by the eclipse cycle of 135 synodic months. This period corresponds to about 11.5 eclipse years and two eclipses are assumed within one eclipse year, so that it is possible to have 23 eclipses within 135 synodic months. See Kiyoshi Yabuuchi, ed., (3), *Chugoku Chusei Kagaku Gijutsu Shi no Kenkyu* (Studies in the History of Science and Technology in Medieval China), Tokyo, 1963, p. 476.

48) Shigeru Nakayama, "Characteristics of Chinese Astrology," *Isis*, Vol. 57 (1966), p. 446.

49) N. Sivin, p. 6.

50) Hans Bielenstein analyzed the records of solar eclipses in those sections of *Tsien Han Shu*, the official history of Former Han' concluding that as the happening of solar eclipse was used as a tool for criticizing the emperor indirectly by the court officials, the records could not be relied upon, after he supplied a figure which shows a good ruler had less eclipses recorded, and a bad ruler more in terms of comparison. See his "An Interpretation of the Portents in the Tsien Han Shu," *Bulletin of the Museum of Far Eastern Antiquities* (1950), Vol. 22: pp. 127-143.

51) N. Sivin, pp. 8-9.

52) Yabuuchi, (2), p. 41.

53) W. Eberhard, p. 66.

Chuan 佐典, the recording of the position of Jupiter in relation with the 12 TSU is based on knowledge acquired in the mid-4th century B.C.⁵⁴⁾ That classic text records the fact that Jupiter moves through the heaven in just 12 years. The twelve TSU is a system of twelve equal divisions of the celestial sphere which is derived from the Jupiter cycle.

The purpose for observing and recording the position and movement of Jupiter in *Tso Chuan*, was to provide for astrological divination. Each TSU 次, one of the 12 sections which divided the heavens, was allotted to a state of China, and the military future of the states was divinated according to Jupiter's position among the TSU.⁵⁵⁾ This kind of geographical division of the heavens could also be seen in Babylonian astronomy.

Any other comparable knowledge about the other four planets was not given in *Tso Chuan*, and the rough cyclic periods of the whole five planets was first recorded, as far as we know, at the end of the 2nd century B.C. Therefore, one might conclude with Yabuuchi that the movements of Jupiter were observed first and gradually information about the other four planets added. According to Needham, there were elaborate technical terms for describing the motions of the planets from the 4th century B.C.⁵⁶⁾ The apparent motion of a planet was termed SHUN 順; retrogradation NI 逆. It thus rose (CHHU 出), advanced (CHIN 進), changed its direction of movement (FAN 返), or retired (THUI 退), and finally set (JU 入). To remain stationary was termed LIU 留, if the stationary condition was particularly long, it was termed SHOU 守. A planet's entering a constellation was called FAN 犯.

By the first century B.C., the Chinese obtained quite accurate estimates of the periods of planetary revolution. Below is a table of the synodic periods of the five planets in the Tsangtung Calendar of the first century B.C. compared with modern estimates.⁵⁷⁾

	Jupiter	Mars	Saturn	Venus	Mercury
	days	days	days	days	days
Tsangtung	398.71	779.53	377.90	584.13	115.91
Present	398.88	799.94	378.09	583.92	115.88

In ancient China the planetary motion was observed in relation to the sun. In this regard, the most important constant for the problem of planetary motions is what is now called the synodic period of the revolution of each planet.⁵⁸⁾ On the whole, in the Chinese method the conjunction or the heliacal rising of the planet was taken into account for the calculation of the planets' motion, starting from the time planetary phenomena and positions were calculated.⁵⁹⁾ Here, we can see a clear similarity between Chinese and Babylonian astronomy:

"The Babylonians were primarily interested in the appearance and disappearance of the planets

54) Yabuuchi, (3), p. 142.

55) Yabuuchi, (1), p. 6.

56) Needham, vol. 3, p. 398.

57) Ibid., p. 401.

58) Yabuuchi, (3), p. 489.

59) Yabuuchi, (3), p. 489.

in analogy to the first and last visibility of moon. It was the periodic recurrence of these phenomena and their fluctuations which they primarily attempted to determine."⁶⁰⁾

The Chinese method of determining planetary motions was non-representational. In Greek astronomy the geometry of circles and curves was prominent; on the other hand, the Chinese method was algebraic, as was the Babylonian. The geometrical theory of planetary motions of the Greeks — the multiple spheres of Eudoxus, the eccentric circles of Hipparchus, and the epicycles of Ptolemy — was never known to the Chinese. The Chinese method was not a calculation based on theoretical considerations, but rather a mere rearrangement, on an apparently suitable basis, of the actual observations.⁶¹⁾

In addition to the similarity of the methods of calculating planetary motions used in Babylon and China in ancient times, we also find a striking resemblance in the character of their astrological divination. Compare the Babylonian records from the library of King Ashurbanipal of 7th century B.C. and the Chinese counterpart from the *Thien Kuan* chapter of the *Shih Chi* (Historical Record) of Ssuma Chien, written about 90 B.C.⁶²⁾

Babylon: If Mars, after it has retrograded, enters Scorpio, the King should not be negligent of his watch. On so unlucky a day, he should not venture outside his palace.

China: If (the) fire-(planet) (Mars) forces its way into the HSIU Chio then there will be fighting. If it is in the HSIU Fang or the HSIU Hsin this will be hateful to kings.

Babylon: If Mars is in (name of constellation missing) to the left of Venus, there will be devastation in Akkad.

China: When Ying-Huo (Mars) follows Thai-Pai (Venus), the army will be alarmed and despondent. When Mars separates altogether from Venus, the army will retreat.

Babylon: If Mars stands in the house of the Moon (and there is an eclipse), the King will die, and his country will become small.

China: If the Moon is eclipsed near Ta-Chio this will bring hateful consequences to the Dispenser of Destinies (the Ruler).

Babylon: If the Northern Fish (Mercury) comes near the Great Dog Venus, the King will be mighty and his enemies will be overwhelmed.

China: When Mercury appears in company with Venus to the east, and when they are both red and shoot forth rays, then foreign kingdoms will be vanquished and the soldiers of China will be victorious.

From these examples we find both systems of star divination were concerned only with state affairs or the ruler, the position and the movement of the planet being the central means of divination. Noting these parallel ideas, and other astronomical knowledge common to China and Babylon, scholars like Neeham and Iijima have asserted that the origin of Chinese astronomy and its culture in general came from Babylon. However, the last word on this issue of cultural exchange must await further study.⁶³⁾

60) Neugebauer, p. 122.

61) Yabuuchi, (3), p. 492.

62) Needham, Vol. 2, p. 353.

63) Peng-Yoke Ho (trans.), *The Astronomical Chapters of the Chin Shu*, Paris: Mouton & Co., 1966, p. 125.

The basic idea of ancient Chinese cosmology was that the heaven and the earth originated from the same source. Their constitutive material being the same in essence, the worlds were an organic unity, and held an indispensable and reciprocal relation. If there was a change in one side, then the other was influenced without fail. In other words, Chinese cosmological ideas were also fundamentally astrological. This notion of unity was represented in the theory of Yin-Yang and the Five Elements, and became the underlying principle of every field of intellectual endeavor in the history of China.

First of all, we will examine the Chinese view of the birth and growth of the universe, i.e., cosmogony. As we learn quickly, the cosmogony, being a kind of natural philosophy, is the premise behind Chinese portent astrology and the source of many characteristics of the occult science. In summary form: ⁶⁴⁾

There was a time of chaos when nothing could be distinguished. The chaotic state then separated into two. The pure and light material became the heaven and the turbid and heavy material became the earth. The heaven is the spirit of *Yang* and the earth is the spirit of *Yin*. The two spirits mixed together and made up all things in the universe. The essence of the *Yang* spirit became the sun and the essence of the *Yin* became the moon, and the overflowed essence from the sun and the moon became the stars. All of these essences are included in heaven. From the intercourse of *Yin* and *Yang*, the Five Elements come. Through the operation of *Yin* and *Yang* and the Five Elements, everything in the universe is produced. All things in heaven and earth affect each other, so if any change occurs on one side, the other side will change in response.

As is seen clearly here, the heavenly bodies and the earthly things are not essentially different. The ultimate constituents of both come from one original material. At the same time, the idea of Yin-Yang and the Five Elements is a core part of the theory of the universe. The cosmogony based on these concepts runs something like this: Before anything could be distinguished in the universe, there was the One Great Spirit. It is the essence of the universe, and the ultimate, absolute force. From it, the two spirits, Yin and Yang, originated and interacted with each other. From the intercourse of Yin and Yang the Five Elements arose. When Yin, Yang and the Five Elements operate together all the phenomena in the universe were produced. The essence of Yin and Yang was the sun and the moon. The five elements are water, metal, fire, wood and earth. The five planets are Mercury(水星), Venus(金星), Mars(火星), Jupiter(木星), and Saturn(土星).

III. EARLY CHINESE ASTROLOGY

Traditional Chinese astrology was never concerned with the determination of individual fates: it was a form of portent astrology as opposed to horoscopic astrology of the Western

64) For a detailed presentation of Chinese cosmogony, see Tadao Iijima's (1), pp. 28-32. The theory was originally found in *Huai Nan Tzu* 淮南子, an encyclopedia written at early time of Han Wu Ti (c. 100 B.C.) by a king and his scholars.

world. In a nation where political interest dominated, celestial events were related only to the ruling class and to national events. As we will see in the next chapter, astrology in China was closely tied to political theory. As a natural consequence, only portent astrology developed — one concerned exclusively with national events, such as riots, banditry, epidemics, famine, flood, earthquakes, etc. as well as any political events concerning the emperor, empress, court officials and feudal lords. Following the Chinese ideas on the structure of the universe which we saw in Chapter II, the heaven and the earth formed an organic whole and were bound by reciprocal relations; as earthly world was viewed primarily in terms of politics, so heavenly bodies reflected the structure of the empire, including the hierarchy of court officials and the feudal lords of the states.

The structure and methods of Chinese astrology were developed most systematically in the "astronomical (or astrological) sections" of the Official Dynastic Histories. The first of these documents, the so called *Shih Chi* (Records of the Grand Astrologer - Historian or Historical Record) was written about 90 B.C. by Ssuma Chien. The astronomical section of it, named *Thien Kuan Shu*⁶⁵⁾ was the primary textbook for Chinese astrology as well as for ancient Chinese astronomy.⁶⁶⁾ In it, the stars and constellations represented human society: the political structure was duplicated in heaven. As there is a governmental system on earth, the Chinese thought, so there is one in the heavenly world. In heaven there were princes, court officials of various ranks, imperial residences, houses of court concubines, royal tombs, various kinds of palaces and court buildings, soldiers, and everything else which pertained to an imperial structure. Heaven and earth corresponded perfectly to each other. In Greece the naming of stars and constellations was influenced by mythological stories and, therefore, was quite romantic. In China, the star map was drawn by a court official⁶⁷⁾, and for official purposes; therefore, we can only find the court hierarchy in their names. But there are some funny cases; for example, there is a star whose name is "heavenly toilet".

Now, when the sun, moon and the five planets travel through the stars and constellations they produce varieties of situations consisting of their relations to the constellations, their relative positions, and changes in their magnitudes: such events augur peace or war, a good or bad harvest and so forth, using the principle of analogy.⁶⁸⁾ The converse case of how the earthly rulers' success or failure in politics influences the heavenly bodies was dealt with too in the *Thien Kuan Shu*. Ssuma Chien also gave the astrological interpretation of unusual appearances of the moon, comets and meteors, and meteorological phenomena such as clouds and vapors of unusual form. The numbers of eclipses recorded at different periods, exceptional showers of meteors, and the corresponding earthly events which they presaged or accompanied were likewise given astrological interpretations.

Most of the "astronomical sections" of the succeeding Official Histories more or less repeated the content of *Thien Kuan Shu* of Ssuma Chien. As Peng-Yoke Ho, the translator

65) The term "Thien Kuan" means in its literal sense "the heavenly officials."

66) Needham, Vol. 3, p. 200.

67) Yabuuchi (2), p. 46.

68) Iijima, (2), p. 13.

of the astronomical section of *Chin Shu* (the Official History of the Chin dynasty, 265-419 A.D.), states, each Official Dynastic History payed more attention to astrological events than its predecessors.⁶⁹⁾ To get a more concrete image of the theory of portent astrology, we will survey the content of the astronomical section of *Chin Shu*.⁷⁰⁾

Heaven is divided into five parts, which consists of five palaces: the east, west, south, north and central palaces. All stars and constellations belong to one of them. As noted, these are named in the image of the bureaucratic system — heaven and earth correspond perfectly to each other. And so also the celestial phenomena reflect earthly events. When something abnormal happens to these stars, it can mean only that something bad or good is occurring or will occur on the earth. Numerous passages exemplify the above concepts.

".....there can be found 118 groups of stars that can be identified inside (i.e. north of and outside (i.e. south of) the (equatorial belt of the) lunar mansions⁷¹⁾ All of them are connected with particular prefectures and kingdoms and with officials, palace (affairs) and all kinds of things."⁷²⁾

"When the officials are loyal and respectful towards the Crown the stars of "keepers of the Law" appear bright and lustrous."⁷³⁾

"Lang Wei governs the guards. When the stars of Lang Wei fail to appear altogether, they presage the death of the Empress, or an Imperial Concubine, or the execution of a favorite courtier. When these stars appear large and bright, or when a guest star is found in their midst, one may expect a senior officer to rise against the throne."⁷⁴⁾

"Tien Chiang ("Celestial River"), consisting of four stars north of Wei (5th lunar mansion), govern the (cosmological force of) Tai Yin. Absence of any of the stars predicts closure of the waterways, rivers, roads and passes to traffic. When they scintillate with all their brilliance we expect heavy floods and mobilization of troops on a large scale. Disorder in the arrangement of these stars presage a shortage of horses. When guarded by Mars they herald the installation of a new Emperor. A guest star entering the group presages the obstruction of rivers and waterways."⁷⁵⁾

"In the Eastern (Palace) the two stars of Chio ("Horn", 1st lunar mansion) from the celestial entrance, between which is the gate to the heavens, and within (the gate) is (situated) the celestial courtyard. Thus through this gate passes the ecliptic, on which move the Seven Luminaries. The left star adjoins the stars of Tien Tien ("Celestial Farm") and symbolizes good order, governing punishments. Just south of it lies the path of the sun. The right star represents the General

69) Peng-Yoke Ho, (trans.) *The Astronomical Chapters of the Chin Shu*, Paris: Mouton & Co., 1966, p. 14.

70) The reason why I picked up *Chin Shu* rather than *Shih Chi* is that the astronomical section of *Chin Shu* only is translated into English as for now, which provides the convenience to use it. The second reason is that in *Chin Shu* the character of astrology of *Shih Chi* is not only repeated in its essence but also augmented in its detail.

71) While Western astrology used twelve zodiacal signs to determine the movement of positions of the sun, moon and five planets, the Chinese used 28 "lunar mansions." Chinese astronomy was based on equatorial coordinates, not on ecliptical coordinates as in the Greek system.

72) Ho, p. 66.

73) Ibid., p. 78.

74) Ibid., p. 80.

75) Ibid., p. 86.

and governs military affairs. North of it lies the path of the moon. These three entrances of the heavens resemble (the openings found within) the four walls of a room. When the stars appear large and brilliant (they presage) peace in the Emperor's reign and favor found by virtuous and talented (scholars) at court. Glittering or change of position (of these stars presages that) the Emperor will travel."⁷⁶⁾

As we saw in Chapter II, the heaven is divided equally into 12 sections, which were called the twelve "Jupiter Station" because they were derived from the 12 year cycle of Jupiter. To each Jupiter Station (which were named TZU in Chinese, as we have seen), corresponding prefectures and state of China were assigned. The reference for dividing each TZU, or "Jupiter Station", was the Lunar Mansions. For an example:

"From the 12th degree of Chen (28th lunar mansion) to the 4th degree of Ti (3rd lunar mansion) is the Shou Hsing TZU, associated with (the terrestrial branch) Chen. This is the division corresponding to Cheng (state) and to Yen-chou (prefecture) (modern Shangtung and Hopei)."⁷⁷⁾

The sun, moon and five planets had their own meanings. To take several examples:

"The sun being the essence of (the cosmological force of) Fai Yang, governs all life, sustenance, benevolence and virtue, and (at the same time) symbolizes the Emperor.....When sunlight from noon till dusk is dim and diffuse, and men cast no shadows, oppressive legislation will make a livelihood hard to earn, and within a year floods will come..... Crows⁷⁸⁾ will appear in the sun itself under the following circumstances; unenlightened actions of the Emperor; disorder in the state brought about by the Ministers; and when an important funeral ceremony is afoot... A solar eclipse arises from conflict between (the cosmological forces) Yin and Yang. It warns that Ministers will attempt to usurp the power of the throne, and presages the downfall of the State."⁷⁹⁾

"The moon being the essence of (the cosmological force of) Tai Yin forms the counterpart of the sun and symbolizes the Empress. It signifies her virtues, but at the same time it also denotes punishments. Within the court it denotes further all the Feudal Princes and the senior officers. Under the rule of a sagacious sovereign it keeps to its proper course, but whenever the officers of the court seize power it moves in an irregular manner."⁸⁰⁾

"When Saturn scintillates and advances, anxiety among the nobles can be expected, and when it retrogradates any attempts made by the army to recover (lost territories) will fall. Fortune smiles upon the State for its territory will expand and its women folk will prosper. What folly it would be to try to conquer it. But beware of loss of land expect distress among the women-folk when Saturn leaves the constellation concerned. A long stay brings prosperity, but change of position misfortune to a State. To pass with speed greater than usual through two or three lunar mansions during the advance (of Saturn) is called ying^盈, which governs defective execution of imperial

76) Ibid., p. 94.

77) Ho, p. 113.

78) Sun-spots, which were observed regularly for centuries after their first recording in 28 B.C.

79) Ho, p. 121.

80) Ibid., p. 122.

orders and also warns of fire and flood."⁸¹⁾

The five planets generated new meanings by their changing mutual relations:

"With regard to the Five Planets, conjunction of Jupiter and Saturn is a sign of civil commotion and famine, that of Jupiter and Mercury means change of plans, that of Jupiter and Venus fore-stalls a funeral."⁸²⁾

"When the moon occults any of the Five Planets it presages the destruction of the State, and when one of the Five Planets enters (the domain of) the moon (i.e. comes into conjunction with it) it forebodes the dismissal of a Minister in the State concerned."⁸³⁾

The seven luminaries, when they went through fixed stars, made out various portents thus:

"When Jupiter remains in a (particular) group it manifests the virtues of the State shown by that constellation, and a rich harvest can be expected. To wage war on this State would be fatal, because disaster will fall upon its enemy."⁸⁴⁾

"Whatever constellation Mars Passes through means disorder, banditry, disease, death, famine and war for whatever State corresponding to that constellation. The presage is intensified when Mars appears crescent-shaped, or when it glitters, changes color, or shifts its position forward, backward, to the left or to the right."⁸⁵⁾

"When a planet leaves a particular constellation, passes through it, or stays in it, the State corresponding to that constellation is affected: the Five Planets Jupiter, Mars, Saturn, Venus and Mercury refer respectively to virtue, ceremonies, prosperity, military power, and the harmony of (the two cosmological forces) Yin and Yang, in the corresponding State. Similarity in color between a planet and the constellation it passes through or arrives at presages a victory, especially in the case where the planet appears pointed (long rays). On the other hand, difference in colour between the constellation and the planet presages a military setback. Colour takes priority over position. While motion takes priority over colour in prognostication in fact, motion is more important than both colour and position combined."⁸⁶⁾

Any peculiar phenomena were also portents and objects of divination; extraordinary clouds and vapors, guest stars and meteors, meteor streams, aurorae and haloes — solar Haloes and Parhelia.

The Chinese system of astrology was deeply concerned with political and military matters, like its Babylonian counterpart. In the Greek world, the mainstream of astrological divination switched from portent to horoscopic astrology some time in the 2nd century B.C. In China, however, the portent astrology which had established itself firmly in the Chinese political

81) Ho, p. 123.

82) Ibid., p. 126.

83) Ibid., p. 168.

84) Ibid., p. 122.

85) Ibid., p. 122.

86) Ho, p. 125.

world by 100 B.C., held for well over a millennium.⁸⁷⁾

In the Chinese occult science, the stars never had divine nature.⁸⁸⁾ The heavenly bodies were mere instruments for the supreme god, Heaven, to reveal his will. On the other hand, in the Greek tradition, the stars themselves were gods. This difference is quite manifest in the divergent cosmogonies of the Chinese and Greek traditions. According to Chinese ideas on the constituents of the universe, the heavenly bodies and the earthly things were not essentially different, because the ultimate constituents of both derived from one original material. When the Greeks first came in touch with Babylonian astrology and their system of prognostication, they mixed their mythological gods with the Babylonian system of divination.⁸⁹⁾ According to Aristotelian physics and cosmology, which provided a theoretical basis for Greek astrology, the heavenly bodies were made of the fifth element, ether, while the earthly things were made of the four elements, water, fire, air, and earth. Earthly things grew, decayed and underwent endless change. However, the stars, made of divine ether, and therefore being perfect, never changed. Stars were in essence different from earthly objects. The perfect beings of heaven affected the things on earth, but the reverse could not hold, for the stars themselves were divine and unaffected.

It is useful, to further our understanding of early Chinese astrology, to look at the system of Royal Observatory. It is known that the Royal Observatory was established at the time of the early Chou dynasty (11th c. - 8th c. B.C.).⁹⁰⁾ However, we do not know the scale of the Observatory nor how long it lasted. There is, in any case, a thorough record of such systematic study from the time of Emperor Wu 武, around 100 B.C. during the former Han dynasty. At this time Ssuma Chien, the writer of the first official history, *Shih Chi*, was the chief of the national observatory, which existed afterwards for two thousand years. Such an enduring astronomical institution could be seen only in Chinese history; in Europe, the earliest continuing observatory (Greenwich in England) dates only from the 17th century.

The duties of the Royal Observatory were:⁹¹⁾ 1) The study of calendrical arts and the production of each year's calendar; 2) Celestial observation and astrological interpretation of such; 3) The measurement and announcement of daily time, i.e. the hours. In the study of the calendrical art was included the measurement of the solstice in order to compute the exact length of a year, and the time of appearance of the first moon to calculate the exact length of a month. Hereafter we can detect that a continuous effort was made by all the dynasties to improve calendrical calculation. As we have seen, the main purpose of the Chinese calendar was to achieve exact predictions of the future condition of heavenly wanderers. The prediction of solar eclipses was the most challenging and difficult job for the Chinese calendar makers, and it was also the most important, since the occurrence of unan-

87) Ibid., p. 22. The relation between astrology and the political theory of Confucianism will be dealt with in the next Chapter.

88) In Taoism the stars were Gods, but Taoism never developed any system of astrology, rather only the custom of star-worship. For more explanation of this, see Mitsukuni Yoshida's *Hoshino Shukyo* (The Religion of the Stars), Kyoto, 1970, pp. 171-175.

89) Jack Lindsay, *Origins of Astrology*, pp. 90-110.

90) Yabuuchi, (2), p. 42.

91) Yabuuchi, (3), pp. 10-13.

ticipated solar eclipses was the most awesome warning to the emperor that Heaven could issue. It is indisputably clear that political and astrological notions provide the main motivation for investigations on the Chinese calendar.

The observations of heaven by the National System and their astrological interpretation were diligently recorded by the official astrologers and later compiled in the official history. Every official history, beginning with *Shih Chi* (Historical Record, 90 B.C.), had sections on astrology (or astronomy), the most important two sections being called the calendrical section and the section on "Heavenly Literature".⁹² The royal astrologers were expected to constantly monitor the heavenly world, and report any abnormal phenomena which occurred (for example, comets, meteors, eclipses, aurorae, haloes, planetary conjunctions, occultations) and provide for them an appropriate astrological interpretation. The enormous volume of astronomical data in the records of Chinese history have made them very useful for modern astronomy; for example the early data on Halley's comet are all byproducts of Chinese astrology.

The third job, the determination of daily time, of the national system, seems purely practical, and indeed, the announcing of time every day must have been very useful since clock mechanism were very rudimentary. The number of workers at the Observatory at the time of Tang dynasty (618-907) was 1,002, which is a surprisingly large number. The chief of the Royal Observatory in ancient and medieval China was given a more than correspondingly high position in rank, which can only be explained by the central place of astrology in political ideology.

The study of heavenly bodies in China was permitted only for the official astronomers and astrologers in the Observatory, and the interpretation of the heavenly phenomena was a national secret, as in Babylon.⁹³ The Mandate of Heaven could at any time be revoked from the emperor and bestowed on another, or taken from one dynasty and given to its successor, whenever the ruler or the dynasty itself lost virtue. And the supreme god always revealed his will through heavenly bodies. Confucian philosophy of politics justified political revolution, asserting that whenever any ruler or dynasty did not govern the people properly, the right to rule the people would be revoked by Heaven.

In a country where the guiding political principle was to follow the will of Heaven, it was a natural consequence that any peculiar heavenly event aroused great controversy among the court officials.⁹⁴ A solar eclipse was one of the most shocking of such phenomena, and different political cliques would try to use it as a weapon for gaining power. Its most direct use was as a method for criticizing the emperor and restricting his power; here are

92) Usually translated as "Astronomical Chapter", instead of "Section on Heavenly Literature".

93) Shigeru Nakayama, "Characteristics of Chinese Astrology," *Isis*, Vol. 57 (1966), pp. 443-444.

94) Eberhard and Bielenstein argued that the portents were used as a tool for political struggle among court officials and for indirect criticism of the ruler. Therefore, the records of portents in official histories, they maintained, could not be relied upon, because later historians fabricated or concealed some of the portents for political reasons. See Hans Bielenstein, "An Interpretation of the portents in the Tsien Han Shu", *Bulletin of the Museum of Far Eastern Antiquities* Vol. 22 (1950): 127-143 and W. Eberhard, "Political Function of Astronomy and Astronomers in Han China," *Chinese Thought and Institution* (ed, J.K. Fairbank), 1957.

some examples of imperial responses to eclipses:

A solar eclipse occurred on a wu-chen day, the last day of the sixth month in the 2nd year of the Huang-Chu reign period of Wei Wen Ti (5th August 221.). The officials petitioned the Emperor to dismiss the Prime Minister (putting the blame for the eclipse on him), but the imperial rescript said: "Since portents are warnings for the Head of State, to put the blame on my Minister would be against the spirit of self-penance exercised by the Emperors Yu and Tang. I (hereby) order all my officials to devote themselves diligently to their respective duties and refrain from impeaching my senior Minister in the event of future celestial and terrestrial portents."⁹⁵⁾

At the beginning of the Tai-Ho reign period (227-232) of Ming Ti the Astronomer-Royal Hsu Chin submitted to the throne (a warning of) a solar eclipse and a suggestion that he and the Prime Minister should be granted leave to make sacrifices at the Imperial Observatory (Ling Tai) in order to avert the impending calamity. The Emperor replied: "I have heard that when the Emperor's actions are faulty the heavens are alarmed and manifest portents as warnings to enable him to repent. Thus when the sun or the moon are veiled or eclipsed, one can infer irregularities in the administration. Since I came to the throne I have not been successful in enhancing the august virtues of my predecessors and propagating exemplary influences (among my subjects). (My actions are) unpleasing to the Imperial Spirits. Therefore when the heavens remind me of my shortcomings I must improve my government and make repentance to answer (their call). (The relation) between the heavens and men is analogous to that between father and son. I have never heard that when a father wished to admonish his son, the latter can appease him by offering him sumptuous food. It would therefore be unreasonable to send my Prime Minister and my Astronomer-Royal to offer sacrifices so as to avert the calamity. I hereby command all officials of status from senior Minister to Minister and Grandees. to devote themselves diligently to their respective duties, as I shall promote and reward those who can compensate my shortcomings."⁹⁶⁾

The instrument and books needed for the divination of heavenly phenomena were made accessible only to the high ranking officials of the Royal Observatory.⁹⁷⁾ Although there were some exceptions to this regulation, public scholars were not usually allowed to study the astronomical literature. For those who know something about heavenly phenomena, it was very tempting to relate that knowledge of celestial bodies to political events and use it for criticizing the government. Therefore, to study heavenly literature was to read secrets of state. Consequently, not even all the official astrologers were allowed to read the divinatory books which was needed to interpret observed heavenly phenomena. And anybody who reported to the authorities somebody's illegal possession of the divinatory books of astrology, was rewarded greatly;⁹⁸⁾ he was given a government office, or, if he did not want one, he was given a large amount of money. In one case the chief of the Royal Observatory taught his son the technique of star divination secretly, which created a political crisis in the court.

95) Ho, p. 152.

96) Ibid., p. 154.

97) Needham, Vol. 3, p. 193. See this page for more details.

98) For more stories of this kind, see Yabuuchi, (3), pp. 25-26.

IV. THE SYSTEMATIZATION OF CHINESE ASTROLOGY AND CONFUCIANISM

When ancient people saw that the sun, moon and five planets moved through fixed stars, sometimes converging and sometimes diverging, and that the seven planets and stars changed their brightness or color, they came to believe that the movements of the heavenly bodies bear a relation with terrestrial events. The appearance of comets or eclipses especially brought fear to the ancient people. By witnessing these heavenly changes they tried to learn about future events on earth. Herein we see the birth of the astrological idea. However, the mere belief that the heavenly bodies exercise some influence on earthly events does not make possible astrology as a system of prognostication. Astrology has its own system and mechanism for prognostication based on some astronomical knowledge. To predict the future conditions of the celestial bodies for the purpose of foretelling future events on earth, it was necessary for the people to know the basic laws of the movement of the stars. In this regard, for the systematization of astrology, knowledge concerning the movement of the sun, moon and the five planets was essential. So, the issue of when Chinese astrology was systematized is primarily an astronomical issue. Although astrology might seem totally irrational from a modern point of view, we see that it did have a coherent system and method for prognosticating the future by observing the heavenly bodies.

The time of the birth of Chinese astrology is not clearly known. The first record of an astrological divination based on the cyclic period of a planet is seen in *Tso Chuan*, one of the Confucian Classics, which is usually regarded as having been written around the middle of the 4th century B.C. or before.⁹⁹⁾ In it, the military future of each state of China was divinated according to the position of Jupiter in one of its twelve "Jupiter Stations".

This was a time when the Chinese paid serious attention to the movements of planets and when the *Ssufen Calendar* was developed, which incorporated the rough periodicity of Jupiter as well as the sun, and moon.¹⁰⁰⁾ As Iijima asserted, the astrological purpose was one of the most important motivations for the development of the Chinese calendar.¹⁰¹⁾ In the Chinese calendar any discovered regularity or periodicity concerning the motion of the seven wanderers was written down, and the future events on earth were divinated by predicting the future conditions of the sun, moon and planets, by computations based on such constants in the calendar. Therefore, with the establishment of the calendar, the systematization of astrology became possible. In China, the two were accomplished at the same time. The cyclic period of the seven luminaries was thus an essential factor in the formation of astrology.

The 4th century B.C. was the middle of the Warring States period (480-221 B.C.), when China was still divided into many states and war among them continued endlessly throwing the whole of China into bloodshedding turmoil. Numerous states arose and perished, and

99) See p. 16 of this paper.

100) See p. 12 of this paper.

101) Iijima, (1), p. 132.

feudal lords tried to predict thier military future and pursued their success in war by observing heavenly phenomena.¹⁰²⁾ The Warring States Period¹⁰³⁾ supplied a good foundation for the birth of astrology.

Although China was divided into many states resulting in political unrest at this time, the Warring States Period saw the unprecedented flourishing of culture and ideas as well as growth in the economy and technology of China.¹⁰⁴⁾ Feudal lords, in their pursuit of wealth and strength, accelerated the development of manual industry, technology, irrigation for farming, and inter-state commercialism. More important was that this was a time when China saw many brilliant new philosophical ideas flower, and the framework within which Chinese science and culture developed began to reveal itself. In fact, people called this the age of the "hundred schools of philosophy". Confucianism, Taoism and Legalism, among others, all appeared shortly before or during this time. In connection with astrology and cosmology, there was a similar flourishing, as we saw in Chapter II.

Already at the end of the 4th century B.C., astrological ideas were applied to political theory. Tsou Yen, who propagated astrological belief and elaborated the theory of the five elements at the end of 4th century, offered a political theory of dynastic revolution called "Theory of Five Virtue Alteration". According to it, each dynasty has its own elements among the five — water, fire, wood, metal, earth — and those five elements have their origin in the five planets of heaven. One of the basic principle of Five Element Theory was that each element dominates another: Water prevailed over fire, fire over wood, wood over earth, earth over metal and metal over water. As the five planets moved about heaven and altered their relationships the five elements on earth produced various changes and alternately overcame one another; and so the dynasties were destined to be replaced by new dynasties of different elements. This theory of Chou Yen was first willingly adopted by the Chin dynasty (221-202 B.C.), under the supposition that the weakened Chou dynasty preceding it had the virtue of fire and the new Chin had the virtue of water. Ever since that time, this theory of revolution was passed down as a secret school. As we can fully imagine the hypothesis was a danger to any existing regime, and whenever the existing empire was weakened or corrupted, the voice of this school was heard.¹⁰⁵⁾

China saw its first unified empire, Chin (221-202 B.C.), at the end of the 3rd century B.C. The first emperor of the newly centralized regime, Shih Hwang Ti 始皇帝, subjugated the feudal lords of the many states which had composed the whole of China. He sent his own officials to govern those states and so established a bureaucratic despotism. Considering the fact that an absolute, bureaucratic monarchy was realized in Europe only in the 16th century, it is amazing that China already had not only a monarchy, but a completely centralized government under one ruler by the 3rd century B.C. Since the Chin dynasty, Chinese

102) Yabuuchi, (2), p. 37.

103) The period between Chou dynasty (11th-8th century B.C.) and Chin dynasty (221-202 B.C.), the first Chinese unified empire, was divided into two periods by historians; the Spring and Autumn Period (722-480 B.C.) and the Warring States Period.

104) Yabuuchi, (2), pp. 16-29.

105) W. Eberhard, pp. 66-67.

political history has been the story of a succession of politically unified dynasties. China was a nation where politics preceded all other forms of endeavor. In medieval Europe Christianity was a dominating force and its political power often overshadowed that of secular rulers. This kind of things was never seen in China. Numerous revolutions occurred, but the new dynasties were never organized under a religious authority.

At the time of Former Han dynasty (202 B.C. - 8 A.D.), there were many religions and schools of thought. However, the distinguished emperor Wu Ti 武帝, after he succeeded in expanding his territory by conquering many nations around China, decided to unify the nation's ideology. He did it by selecting one set of teachings, Confucianism, as the official ideology of realm. The feature which endeared Confucianism to him was its deep concern for the constitution of the nation and the preservation of the strict hierarchy of social order.

Iijima, who has made a thorough study of the Confucian Classics, concludes that while Confucianism deals with philosophy, ethics, and politics, its doctrine on these matters were related to calendrical astronomy and, indeed, were permeated with astrological ideas.¹⁰⁶⁾ Confucianism, as is generally and rightly maintained, is not a religion. It suffers from its silence about the realm beyond life. Moreover, Confucianism attaches great importance to humanity and to ethical and political considerations. Its view on religion is conditioned by the fact basically Confucianism regards religion as a form of education: in Chinese the word for religion is the education, chiao 教. For the Confucian, religion exists for the purpose of moral cultivation, although this does not mean that religion, as understood by Confucian, is devoid of spiritual or supernatural aspects.¹⁰⁷⁾ Therefore, it should be remembered that Confucianism was quite different in its character as a religion from the Christianity of Western world. In particular, the Confucian Classics should be understood in this context.

Among ancient written sources which employ astrological events Confucian Classics are the oldest.¹⁰⁸⁾ And as has been pointed out, these formed the basis of Chinese political and social philosophy and have influenced the Chinese mind in general. It is not too extreme to say that China is the nation of Confucianism. The authors of most Classics and the time of their writing are not known clearly. It is speculated that Confucius (551-478 B.C.) and those of his disciples who were active at the end of the "Spring and Autumn Period" (722-480 B.C.) completed the essential parts of them.¹⁰⁹⁾ These Classics chiefly concern philosophy, ethics, and politics in relation to astronomical events, and the astrological interpretation of these events. The Confucian Classics are thus intimately bound with the early development of astronomy and astrology. The Classics, *Shuching* (Book of History) and *Chun Chiu* (Spring and Autumn Annals), are good examples of this relationship.¹¹⁰⁾ *Shuching* emphasizes that a ruler must pay great attention to celestial changes. *Chun Chiu* describes the solar eclipses, comets, earthquakes and other calamities, and all of those phenomena are given astrological interpretation, being understood as the consequences of the exercise of the will

106) Iijima, (1), p. 1.

107) *Encyclopedia*, Vol. 6 (1968), p. 308.

108) Iijima, (2), p. 24.

109) Yabuuchi, (2), pp. 54-55.

110) Iijima, (2), pp. 54-55.

of heaven. *Iching* (Book of Changes), one of the chief Classics of Confucianism, explicitly states that Heaven shows us our good and bad luck through heavenly bodies.¹¹¹⁾

What is this political doctrine which supported Chinese despots for more than two millennia? This issue turns out to be a central one for the broader concerns of this paper. According to Confucian political theory, the ruler of China represented the whole terrestrial world; i.e., was the ruler of the earth as a whole. He received this right from Heaven, from the supreme God of the universe. He was the Son of Heaven, which designation superseded that of Emperor from this time. As he received the Mandate of Heaven, the earthly ruler was supposed to govern his people according to the will of Heaven. The Mandate of Heaven would be withdrawn from the emperor if he neglected the orders of Heaven. He might be dismissed from his throne or his empire might be overthrown for a new dynasty. In this way Confucianism justified political revolution. An Imperial edict from the time of Han reads:

When the prince of men is not virtuous, a reproach appears in Heaven or Earth, and visitations and prodigies happen frequently, in order to inform him that he is not governing rightly. Our experience in governing has been (only) for a brief time, so that (We) have not been correct in (our) acts, hence on (the day) mou-shen (i.e. 5th Jan. 29 B.C.) there was an eclipse of the sun and an earthquake. We are greatly dismayed.....¹¹²⁾

Heaven taught and admonished his Son by changing the heavenly bodies whenever any evil event was going to happen or had happened. Therefore, the Son of Heaven had always to watch carefully the heavenly bodies in order to read the will of Heaven.

The leading power behind establishing Confucianism as the Chinese national religion, was the famous Confucianist of the Former Han (202 B.C. - 8AD.) Tung Chung Shu, at the time of Wu Ti 武帝. It was he who developed systematically the political idea of "Heaven" and tied it closely to astrology. It was also he who elaborated a striking theory concerning the relationship between the worldly ruler and Heaven, the supreme God of the universe, called the "Theory of Reciprocation".¹¹³⁾ This theory maintained that Heaven not only changed the heavenly phenomena to show its will or admonish the worldly ruler or his officials, but also conversely, that the bad or good behavior of men, and especially the emperor's way of ruling the people, affected and was reflected in the celestial bodies. Heaven and man were held in a reciprocal relationship. The emperor was the mediator between the natural order and the social order; it was his duty to keep the harmony between the celestial and the earthly spheres. Heaven and human society were indispensable to each other for their peaceful existence. The theory of Reciprocation was, in fact, inextricably bound up with the Chinese cosmogony. Another way of looking at it is that the theory is nothing more than the direct application of the cosmogony to Chinese political theory.

Tung Chung Shu realized that it was wise to unify the thought of the empire in order

111) Yabuuchi, (2), p. 37.

112) Homer H. Dubs (trans.), *History of the Former Han Dynasty*, Baltimore: Waverly, 1938, Vol. 2, p. 382.

113) Iijima, (1), pp. 47-48, and Yabuuchi, (1), p. 8.

to maintain political unity. He further elaborated how the will of Heaven is revealed, in his *Chun Chiu Fan Lu*, as follows:

According to a rough classification, when the creatures of heaven and Earth display unusual changes, these are called "anomalies"; lesser ones are called "catastrophes". The catastrophes always appear first and are then followed by anomalies. Catastrophes are the warnings of heaven; anomalies are its threats. Heaven first sends warnings, and if (man, being thus warned), fails to understand, then he is made to feel awe through such anomalies... The genesis of all such catastrophes and anomalies is then direct result of errors that exist within the nation. When the first indications of errors begin to appear in the nation, Heaven sends forth fearful catastrophes to warn men. If, being thus warned, (men) fails to understand (the reason for) these manifestations, then ominous anomalies appear to terrify him.¹¹⁴⁾

According to Tung Chung Shu, heaven could always influence man through such portents as eclipses and comets, because both of them were governed by the two cosmological forces, Yin and Yang.

Heaven possesses the yin and yang, and man also possesses the yin and yang. When the universe's cosmic force of yin arises, man's cosmic force of yin arises in response. And conversely, when man's cosmic force of yin arises, the universe's cosmic force of yin should arise in response. The principle is the same. He who understand this, when he wishes to bring rain will activate the yin (in man) in order to arouse the yin (of the universe); when he wishes to stop rain he will activate the yang (in man) in order to arouse the yang (of the universe). Therefore the bringing of rain is nothing supernatural... It is not only the cosmic forces of the yin and yang that can approach or withdraw according to their kind. Even the way whereby misfortunes, calamities, and blessings are produced follows the same principle. It is nothing but a case in which one starts something oneself and things act in response according to their kind.¹¹⁵⁾

From about 100 B.C., astrology thus came to be tied firmly to politics. And the Confucian political theory was destined to be maintained throughout Chinese history. By this mechanism, astrological concepts had a pervasive influence on Chinese thought and Chinese institutions during the great part of their existence.

V. SUMMARY AND CONCLUSION

The main characteristics of early Chinese astronomy were maintained throughout Chinese history. Calendar making and the daily observation of heavenly bodies were the two mainstays of that astronomy, and the work was carried on by government officials. Already in the third century B.C., at the time of the Chin dynasty, the first unified Chinese empire, a bureaucratic system of government was established.¹¹⁶⁾ This system was maintained without exception by all succeeding dynasties, which is an amazing fact if we remember that in the

114) Chu Chai, *Confucianism*, New York: Barron's Educational Series, Inc., 1973, p. 103.

115) *Ibid.*, p. 104.

116) As for Chinese bureaucratic systems, see Yabuuchi, (3), pp. 23-33.

Western world, a true governmental bureaucracy only appeared with the modern nations. The Chinese bureaucrat was a scholar. He was a member of an elite corps which was the carrier of the culture, science and technology of his time. This corps of government officials has been the supporter and transmitter of the greater part of the Chinese intellectual achievement and its science ever since the Chin dynasty. And, since the Han dynasty, in a society where Confucianism was the national doctrine, these officials were Confucianists.

We have seen that the Chinese calendar played an essential role in predicting the future and that everyday observation of heavenly change was the main method of discovering the warnings of Heaven. For these reasons, in Chinese astronomy, the handmaiden of portent astrology, the improvement of the calendar as well as the daily observation of heavenly bodies was the central concern. Sivin notes that "because of its astrological idea, Chinese astronomy was excellent only in the area of the calendar, making its character quite mathematical", and further says: "An astronomical system was a complete set of mathematical techniques for calculating an ephemerides which provides both positions and dates of characteristic phenomena for the sun, moon and planets."¹¹⁷⁾

As a result of the daily observation of celestial bodies, the Chinese accumulated an enormous quantity of empirical data, some of which have proved to be very useful for modern astronomical research. Between the 5th century B. C. and the 10th century A.D., in fact, the Chinese records are practically the only ones available.¹¹⁸⁾ The record of recurrent apparition of comets confirmed retrodictions about Halley's comet. The Chinese record on the appearance of novae and supernovae cover the whole of that period between Hipparchus and Tycho Brahe during which the rest of the world was not even aware that new stars sometimes appear in the heavens. The appearance of sun-spots was noted by Galileo only after making his telescope, whereas the Chinese recorded sun-spots in 28 B.C. and regularly thereafter for centuries.

According to one of the basic ideas of Confucianism, the law of the universe was ruled by Heaven, the supreme god of the universe, and it was beyond human capacity to grasp the eternal law of the cosmos. For the Chinese, the heavenly bodies were not essentially different from the terrestrial bodies and the movements of heavenly bodies were constantly affected by terrestrial events and the actions of human beings, especially by the ruler. Also, Heaven warned the earthly ruler by altering the stars, movements from their normal paths and conditions. Therefore, for the Chinese, it was impossible to hang fixed (eternal) laws on the movements of the heavenly bodies.

This provides a good example of the Chinese attitude toward the external world. The prediction of solar eclipses was a very difficult job for Chinese astronomers before modern days. During the Tang dynasty one such prediction failed, but the court officials reported to the emperor that the eclipse did not happen because of the emperor's superior and virtuous leadership. Although at this time, the Chinese admitted the scientific nature of computing future eclipses, they nevertheless believed that by keeping the social order in harmony,

117) Sivin, p. 7.

118) Needham, Vol. 3, p. 171.

natural calamity could be averted. So the emperor was congratulated and the mistake of the astronomers was explained away.¹¹⁹⁾

Astronomy in those days was only the handmaiden of astrology. Because of its importance to the security of state, Chinese astronomy was the exclusive domain of government officials: public study of it was regarded as dangerous to the interests of the empire. Bureaucratic astronomers pursued only such aspects of astronomy as the state required, particularly the improvement of the calendar and the daily observation of the stars. This tradition was passed down generation to generation by court astronomers in the Royal Observatory.

In China, numerous dynasties rose and fell by revolution all through its history, but there was no essential change in its political system and social structure. China was a nation where everything was thought of from the viewpoint of political interest, and the emperor and his ruling class were powerful enough to impose their interest on the people. The Chinese peculiar political ideology, based on Confucian doctrine, eventually decided the character of Chinese astronomy and astrology: only the portent astrology, which responded to the interest of despotic system, could develop in China. The science of Chinese astronomy and astrology was simply a cultural product of the people who lived in the Chinese society.

119) Yabuuchi, (3), p. 19.