Galileo – Documents Packet

Primary and secondary documents are the backbone of historical research. Primary sources give us a first-hand account of an event, while secondary sources give us a broader perspective on an event, given time, distance and new insight. As students of history, we must possess the ability to properly analyze a document in order to understand its value. This packet of documents relating to the “scientific revolution” of the 16th & 17th centuries is designed to sharpen your historical thinking skills.

Assignment:
1. Read each document.
2. Answer the questions that follow each document.
3. Be prepared to discuss: What challenges did scientific minded people face during the 16th and 17th Century?

Document 1


It is generally agreed that the Middle Ages preserved for the use of later times the science of the ancient Greeks and Romans. Therein lies both the scientific achievement and the scientific failure of the medieval civilization. . . . What the Middle Ages took over they did not very much enrich. Indeed so small was their own contribution that historians of science are apt to regard the Middle Ages as something of a pause or vacuum in scientific advancement. . . . Why then this poverty?

The easiest to account for is the intellectual. The Middle Ages were the age of faith, and to that extent they were unfavorable to scientific speculation. It is not that scientists as such were proscribed. For on the whole the persecution of men for their scientific ideas was very rare: rare because men with dangerous ideas, or indeed with any scientific ideas at all, were themselves very rare; and it is indeed surprising that there were any at all. This does not mean that there were no intellectual giants. All it means is that in an age which was one of faith and men of intellect and spirit found the calls of faith itself. To put it simply, they had no time for occupations like science.

In fact they had neither the time nor the inclination. For even if there had been enough men to engage in activities as mundane as science, there would still be very little reason for them to do so. In times when medieval religious belief stood whole and un-shaken the intellectual objects and the methods of science were, to say the least, unnecessary. The purpose of scientific enquiry is to build up piecemeal a unified theory of the universe, of its origin and of its working. But in the Middle Ages was that process really necessary? Did not medieval man already possess in God, in the story of Creation a complete explanation of how the world came about and of how, by what means and to what purpose, it was being conducted? Why question the bible and the church which held the keys to salvation?

So much for intellectual incentive. The practical incentive was almost equally feeble. Greater understanding of nature could not come from technical improvements, chiefly because technical improvements were so few. Medieval occupations continued for centuries without appreciable change of method. After the great period of Initial development, i.e., after the late eleventh century, the routine of medieval farming in the greater part of Europe became as fixed as the landscape itself. During the Middle Ages as a whole technical improvement was very rare and very slow. For this medieval economic policy was largely to blame....

What is more, so deeply ingrained was the spirit of protection that in every local trade the technical methods were treated as a secret. . . . The men of the Middle Ages were unable to do more than they did because they were lacking in scientific incentive.

1. According to the author, what are some of the reasons that there was limited science during the Middle Ages?
3. Explain Copernicus’ view of the universe and explain why this view of the universe may have been controversial during this time period (1530’s).

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Document 4

**PRIMARY SOURCE: A Letter to Christina of Tuscany from Galileo Galilei, 1615.**

I think that in discussions of physical problems we ought to begin not from the authority of scriptural passages, but from sense-experiences and necessary demonstrations; for the holy Bible and the phenomena of nature proceed alike from the divine Word. It is necessary for the Bible, in order to be understood by the average man, to speak many things which appear to differ from the absolute truth so far as the bare meaning of the words is concerned. But Nature, on the other hand, is inexorable and immutable and never transgresses the laws imposed upon her, or cares whether reason and method of operation are understandable to men...

For that reason it appears that nothing physical which sense-experience sets before our eyes, or which necessary demonstrations prove to us, ought to be called in question (much less condemned) upon the testimony of biblical passages which may have some different meaning beneath their words. For the Bible is not chained in every expression to conditions as strict as those which govern all physical effects; nor is God any less excellently revealed in Nature’s actions then in the sacred statements of the Bible. ... The Bible shows the way to go to heaven, not the way the heavens go.

From this I do not mean to infer that we need not have an extraordinary esteem for the passages of Holy Scripture. On the contrary, having arrived at any certainties in physics, we ought to utilize these as the most appropriate aids in the true meaning of the Bible and in the investigation of those meanings which are necessarily contained therein, for these must be understood with demonstrated truths. I should judge that the authority of the Bible was designed to persuade men of those beliefs and propositions which, surpassing all human reasoning, could not be made credible by science, or by any other means than through the very mouth of the Holy Spirit.
Yet even in those propositions which are not matters of faith, Biblical authority ought to be preferred over that of all human writings which are supported only by bare assertions or opinions, and not set forth in a demonstrative way. This I hold to be necessary and proper to the same extent that divine wisdom surpasses all human judgment and conjecture... I do not feel obliged to believe that that same God who has endowed us with senses, reason, and intellect has intended all humanity to forgo their use and by some other means to give us knowledge.

4. According to Galileo, what is the proper relationship between scripture and science?

5. How does he use religious beliefs to support the work of science? How is this connected to the ideals of the Renaissance?

6. Galileo was both a scientist and a devoutly religious man. How do both of those beliefs shape his point of view about this issue?

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**Document 5**

**PRIMARY SOURCE:** *The Papal Inquisition’s condemnation of Galileo, 1633.*

We say, pronounce, sentence, and declare that you, the said Galileo, by reason of the matters discussed in trial, and by your confession as you rendered, are in the judgment of this Holy Office vehemently suspected of heresy, namely, of having believed and held the doctrine—which is false and contrary to the sacred and divine Scriptures—that the Sun is the center of the world and does not move from east to west and that the Earth moves and is not the center of the world...

Furthermore, your opinion has been declared and defined to be contrary to the Holy Scripture; and that consequently you have incurred all the censures and penalties imposed and stated in the sacred laws of the Church, for [breaking] this sacred law...

From which we are content that you be absolved, provided that, first, with a sincere heart and unfeigned faith, you renounce, curse, and detest before us the aforesaid errors and heresies and every other error and heresy contrary to the Catholic and Apostolic Roman Church in the form to be prescribed by us for you.

7. Explain why the Catholic Church might condemn Galileo for his scientific practices and beliefs?

8. Explain how the Catholic Church is biased in their beliefs towards the work of Galileo and other scientists.