M. Celoria remarks that possibly from the advanced age which Toscanelli had attained, and the inclement season at which the comet was visible, the Florentine astronomer has not left for the comet of 1472 a representation of its track relatively to the stars as he has done for those of 1433, 1449, and 1457, nor an ephemeris of positions as in the case of the comet of Halley at its appearance in 1456; but two pretty definite places are assigned in Toscanelli's manuscript for January 9 and 17, and with the help of provisional elements a third position for January 22 is deducible. Still, in determining the most probable orbit, M. Celoria has found it desirable to utilise the one definite observation on January 20 which has been left by Regiomontanus. The principal available data are :—

Paris Mean Time	Comet's Longitude	Comet's Latitude
	° ′	° ′
January 9·6326	193 0	+13 0
17·6007	190 20	26 30
20·4021	185 12	46 3
22·2347	110 30	+80 32

Two orbits result from the discussion of these positions, and M. Celoria concludes that it is difficult to decide which is preferable. These orbits are as follows :—

	Orbit II.	Orbit III.
Perihelion passage } Paris mean time }	1472, Feb. 29·89097 ...	Feb. 29.94555
	° ′ ″	° ′ ″
Longitude of perihelion ...	39 14 56 ...	39 46 27
,, ascending node	296 7 49 ...	285 53 25
Inclination ...	14 11 46 ...	9 9 54
Log. perihelion distance	9·68072 ...	9·68654

Motion—Retrograde.

Both sets of elements have the degree of precision compatible with the nature and number of the observations, and beyond doubt afford a closer approximation to the true orbit than either of the previous computations. Perhaps we may attach a slightly greater weight to M. Celoria's orbit II., from which it appears that the nearest approach to the earth took place at midnight on January 22, when the comet in right ascension 293°·5 and declination +76°·6 was distant 0·0652, with an apparent motion of 40° of a great circle daily. On this day Toscanelli refers to the interference of moonlight, and it appears certain that the presence of the moon must have greatly diminished the imposing aspect of such a comet while in the earth's vicinity. In fact we find that the moon was at the first quarter on January 18, and consequently at full soon after the nearest approach of the comet, when the theoretical intensity of light was one hundred times greater than at the end of the first week in January.

One of the European chronicles dates the first appearance of the comet on December 25, 1471, when it will be found from elements (II.) that it was in right ascension 194°·4, declination + 5°·5 at 6 a.m. in London; intensity of light, 0·38. In a quaint description of the comet's track by John Warkworth, Master of St. Peter's College, Cambridge, and a contemporary, which was published in the *Philos. Mag. and Journal of Science*, vol. xiv. (1839), we read: "And some men saide that this sterre was seen ii or iii oures afore the Sunne rysynge in Decembre iijj days before Chrystynmasse in the Southwest . . . ;" calculating for 6 a.m. on December 21 we find the comet was in right ascension 193°·8, declination + 5°·2: it would consequently be near the meridian two hours or so before sun-rise, instead of the western quarter of the sky. It is clear that as regards position it might have been found three weeks earlier than Toscanelli's first observation. Warkworth says the comet disappeared on February 22. The Chinese saw it on February 17 approaching one of their constellations composed of α, δ, &c., in Pisces, and it is added in Biot's translation "elle fut longtemps à s'effacer;" calculation gives the place in right ascension 11°·9, declination +0°·7, intensity of light 3·3, in the early evening at Pekin on that date.

M. Celoria's notice contains the geocentric track of the comet, according to both sets of elements, from January 9 to February 27. There is some reference in Pingré to a comet at the beginning of May, 1472, when the comet of Regiomontanus and Toscanelli would rise in Central Europe before 2 a.m., with an intensity of light about equal to that it possessed at the previous Christmas.

ASTRONOMICAL PHENOMENA FOR THE WEEK, 1885, JULY 12–18

(For the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on July 12

Sun rises, 3h. 59m.; souths, 12h. 5m. 20·7s.; sets, 20h. 11m.; decl. on meridian, 21° 56′ N.: Sidereal Time at Sunset, 15h. 35m.

Moon (New on July 12) rises, 4h. 31m.; souths, 12h. 20m.; sets, 20h. 2m.; decl. on meridian, 16° 47′ N.

Planet	Rises	Souths	Sets	Decl. on meridian
	h. m.	h. m.	h. m.	° ′
Mercury ...	5 18 ...	13 14 ...	21 10 ...	20 23 N.
Venus ...	5 35 ...	13 25 ...	21 15 ...	19 30 N.
Mars ...	1 28 ...	9 40 ...	17 52 ...	22 54 N.
Jupiter ...	8 5 ...	15 4 ...	22 3 ...	10 52 N.
Saturn ...	2 32 ...	10 42 ...	18 52 ...	22 32 N.

Occultation of Star by the Moon

July	Star	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image
			h. m.	h. m.	° °
18 ...	*m* Virginis	... 6 ...	10 10 ...	10 27 ...	184 215

Phenomena of Jupiter's Satellites

July	h. m.		July	h. m.	
13 ...	20 50	II. occ. disap.	15 ...	21 15	I. tr. egr.
14 ...	21 38	I. occ. disap.			

The Occultations of Stars and Phenomena of Jupiter's Satellites are such as are visible at Greenwich.

July	h.	
13 ...	12 ...	Mercury in conjunction with and 5° 39′ north of the Moon.
13 ...	15 ...	Venus in conjunction with and 5° 22 north of the Moon.
15 ...	7 ...	Jupiter in conjunction with and 3° 7′ north of the Moon.
17 ...	14 ...	Mercury in conjunction with and 0° 11′ south of Venus.

GEOGRAPHICAL NOTES

Dr. Gottsche, formerly a professor in the University of Tokio, has, as we have already intimated, returned to Europe after a long journey in Korea, during which he acquired much information with regard to that country. The length of his journey was over two thousand miles, and he visited all the eight provinces of Korea, as well as 84 out of the 350 districts. The main object of Dr. Gottsche's explorations was to ascertain whether coal and other useful minerals existed in the country; but, on account of influential support which he received he was able to obtain from the native authorities information with regard to the population, taxation, harvests, trade, &c. He has also collected much statistical information which is wholly new and which it is expected will show that the recent English consular reports are quite incorrect. Amongst others the population of the peninsula has been greatly underrated. It has generally been put down at nine millions, whereas it really is over twelve millions, for the official census from which the former estimate is taken only takes into account adults. Dr. Gottsche's principal stations on the journey were Söul, Ichhön, Kwisan, Mangyöng, Kyöngyn, Pusan, Changwön, Cwangyn, Chinsan, &c. He was 138 days *en route*, and, although this was not rapid, he was compelled to neglect some branches of investigation, such as botany and zoology, for his main business was with geology. In this respect Korea appears to belong to the bordering Manchuria. He found but few traces of the high development which the art and science of the country reached in early ages, and which made it the instructress of Japan. Dr. Gottsche, it is said, intends publishing an account of his journey.

Prof. Blumentritt, in an article in *Globus* on the Negritos of the Philippines, points out that the notion which was general at one time that these aborigines of the Archipelago were almost extinct, or absorbed into the Malay population, is an error. It may be said with certainty that they no longer exist in the Babiuyanes, Batanes, and other groups lying to the north of Luzon: but we know too little of the interior of Sámar and