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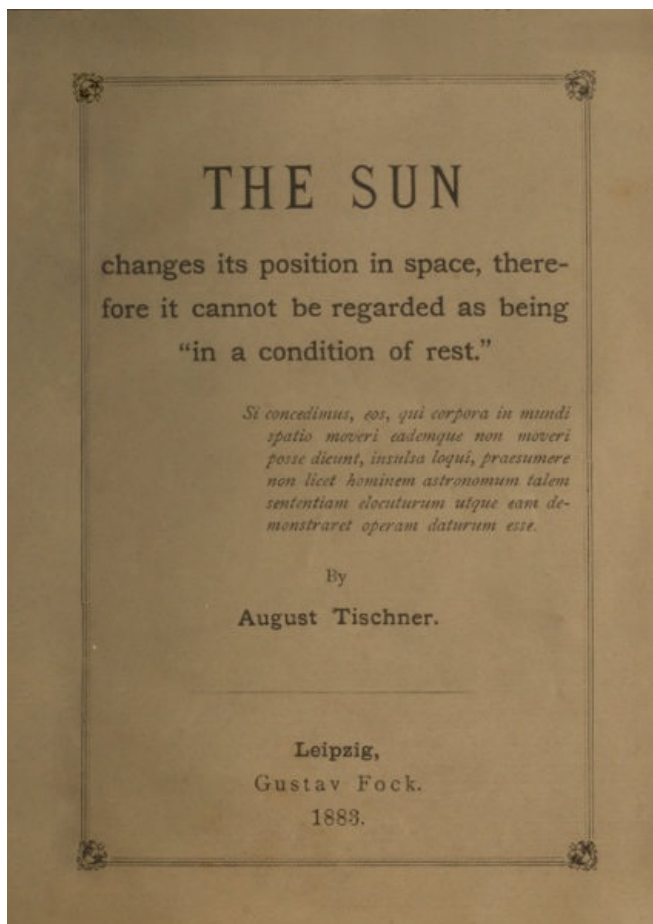
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*** START OF THE PROJECT GUTENBERG EBOOK THE SUN CHANGES ITS POSITION IN SPACE ***

Transcriber's Note:

Every effort has been made to replicate this text as faithfully as possible, including inconsistencies in spelling and hyphenation. Some corrections of spelling and punctuation have been made. They are listed at the end of the text.



THE SUN

changes its position in space, therefore
it cannot be regarded as being
"in a condition of rest."

*Si concedimus, eos, qui corpora in mundi
spatio moveri eademque non moveri
posse dicunt, insulsa loqui, praesumere
non licet hominem astronomum talem
sententiam elocuturum utque eam demonstraret
operam daturum esse.*

By
August Tischner.

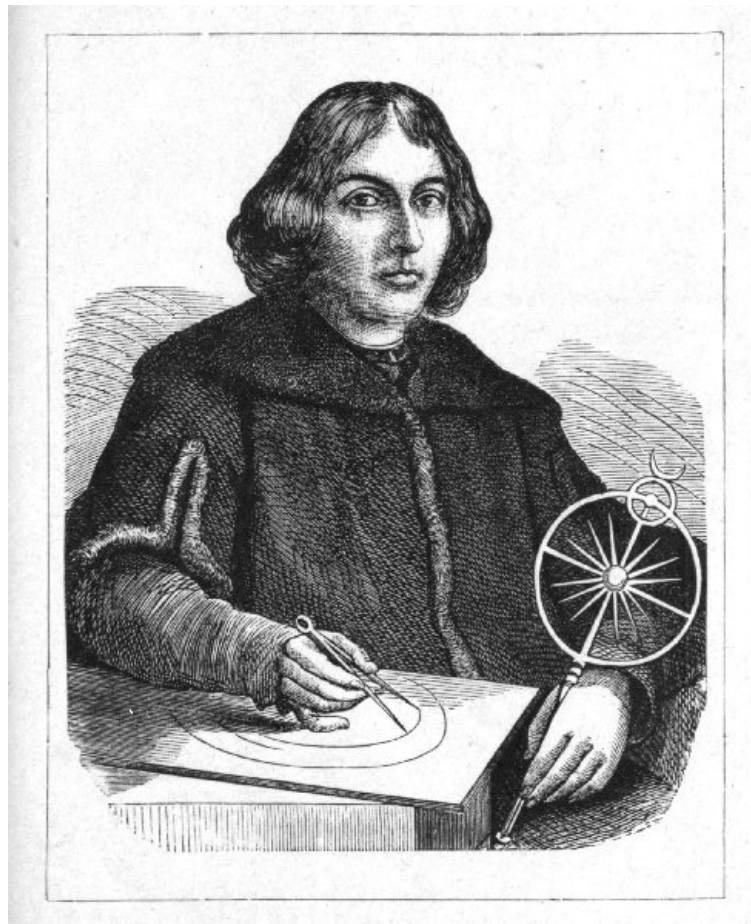
Leipzig,
Gustav Fock.
1883.

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Dedicated
to all friends of Rational Astronomy.

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Nicolaus Copernicus.
Terrae motor, solis stator.

The system of Copernicus is the only possible system; it is the eternal base of all astronomical progress, with this system the science of Astronomy stands and falls, and without it we must give up all explication as well as every scientifically founded predication. Hence it is clear that an astronomer of the present day cannot enter upon any other system, even by way of trial.

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Dr. J. H. Mädler. Popul. Astr. 1861.
p.p. 48. 54. 62.

An army of philosophers will not suffice to change the nature of an error and to convert it into truth. Ebn-Roshd (Averrhoës), Arabian philosopher of the XIIth century.

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Astronomical science, at the present day insists upon the system of Copernicus, which, as is well known, is based upon the theory of a *fixed sun*, and remains convinced of the incontrovertible truth and importance of this system, even after it has become an incontestable fact, that the sun changes its position; endeavouring to explain away this discrepancy by the sophism, that the sun may be considered as *in a condition of rest*. But the smallest movement of the sun overthrows the entire fabric of Copernicus. Unless we take into account the observations, made for the last 3000 years, respecting the movement of the sun in space, it is impossible to comprehend the solar system and its movements. Theory must take notice of the phenomena of the sun's own movement and dare not cloak it under imaginary causes; for so long as the motion of the sun is ignored, it is impossible to know thoroughly the motion of the earth which follows it, and if the

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motion of the earth be not known, it is also impossible to know the motion of the other heavenly bodies, belonging to the solar system, as seen from the earth. In a word, the astronomical theory, as it is now generally accepted and believed to be the only and doubtless true, is wholly untenable, requiring *a total and essential* reformation; astronomical authors cling to J. H. Mädler's assertion, that every body will understand the impossibility for an astronomer of our time to enter upon any other system even by way of trial.

If this theory be converted into a *dogma*, stagnation must commence and all progress becomes impossible. In the history of science and its advance, we find that there have been at all times new theories propounded, which had often to be changed later on, or even set aside by others diametrically opposite. The principal circumstance which renders the system of Copernicus impossible, is that the orbits of the planets *are considered as closed curves around the sun*. This view has frequently been attacked; but it is maintained by astronomers, as it is requisite for the elucidation of the system. Still it is evident that if the centre of attraction moves forward the bodies attracted by it *cannot move around it*.

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Let us examine the system of Copernicus. Ptolemæus first introduced his system among the ancients. The earth was the fixed centre of the world and around it moved the moon, the sun, the planets and the stars. This system lasted for XV centuries.

The Ptolemaic system was modified by Copernicus, and the system of Copernicus was simply the inversion of the Ptolemaic. The sun took the place of the earth. In the centre was a fixed point (earth or sun), around which the planets moved in larger or smaller orbits.

The main feature of both systems is that one of the heavenly bodies is *stationary, in order that the others may travel round it*.

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Copernicus makes the sun *to be motionless*, and the scientific world bows before his authority. Then we have the recurrent curves, *closed orbits* (or ellipses) with their axes and their *invariable plains*; for the planets *move round the centre of the fixed sun*.

Whilst however learned men were striving with feverish ardour to confirm the system of Copernicus; whilst they were endeavouring to demonstrate in every possible way and by various means clearly, *that the sun is immovable*: there came the discovery *that the sun moves*.

The astronomers of the past century proved that the sun not only has the apparent motion, which every one sees; but that it also has a motion proper to itself. Herschel commenced defining the course and direction of it, and now-a-days no one doubts the truth of this fact, it being the general opinion that not only the sun moves itself, but that nothing at all in the world is in a state of rest. Astronomers, however, are of opinion that this discovery is of *no consequence whatever as regards the system of Copernicus, which is still considered by them to be the most correct of all and the only possible one*. For more than a century there has not been found a single astronomer or scientific man, to whom it has occurred *that the motion proper to the sun, might have, in some way or another, an influence on the present state of theoretical science*. They all seem to regard *this fact* as an accident, involving no consequences and quite incapable of distracting them from their labours, which they continue to work in the same manner as is indicated in the system of Copernicus.

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If an advancing motion is admitted to be the motion proper to the sun, *the orbits traversed by the planets cannot be closed*.

But the question may be asked: is it true that science contradicts itself in this way? We reply: Yes! astronomical *observation has overtaken theoretical or explicative science. Theory has stood still*.

In order to set their minds at rest, learned men explain what they wish to explain, and just as heavenly phenomena were accounted for according the systems of Ptolemæus, of Copernicus and of Tycho de Brahe, so too there will be no lack of good reasons to account for the motion proper to the sun; only history will tell us that the astronomers of the last but one decennium of the XIXth century have taught by writing and speaking in their schools, that the sun is at the same time moving and not moving.

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A science which cannot make any use of this immense discovery, nor deduce any application from it, does not possess any vital power; it is a dead science, it is strangled by those whose duty is to keep it alive, to lead it onwards to perfection.

Astronomers assert "*that the sun conducts its system with himself in mundane space,*" but in the same breath they add: "*with reference however to the planets it may be regarded as in a state of rest.*"

Hence astronomers have discovered *a motion which is at rest*.

If the sun is *not fixed*, the system of Copernicus falls to ground. Either the sun moves, or does not; a moving sun in a condition of rest, *is an impossibility*.

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If the sun moves, there is *no fixed centre*, there are *no closed or recurrent curves and no plains of orbits*. If these must be obtained at any price, the sun must be definitively fixed, it cannot be permitted *to move onwards and yet at the same time not to move*.

The fact that the sun moves, cannot now be altered and cannot be any longer ignored; and if mathematicians and astronomers do notwithstanding assert, that the sun may with reference to its own planetary system be regarded as fixed, or in a condition of rest, in that the system moves as a whole without any change taking place in the relative position of the planets to each other,

or in their relation to the sun; in fact without any alteration taking place in the *configuration* of the system—we reply, this is one of those meaningless phrases, which should find no place in a scientific discussion. *A body which is in motion cannot be in any way regarded as being motionless*, it would be just as reasonable to say that a locomotive, dragging a train of carriages full of passengers, could with reference to the latter be regarded as motionless.

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The actual meaning of such an assertion is that the planets are attached to the sun in such a manner, that they can neither approach to, nor recede from it, but must follow it whithersoever it goes.

We may in thought pursue a train of hypotheses and suppositions, but they do not thereby acquire reality; still, in a normal condition of the human intellect, it is impossible to conceive that any thing can exist and not exist at the same time.

From this confusion of ideas, it might seem as if theoretical astronomy had got into an untenable position which is irreconcilable with science and ought therefore to endeavour to enter upon a better state, as soon as possible. *Theory ought therefore, either to have accepted as a fact, the motion proper to the sun with all its inevitable consequences, or else, to have denied this motion altogether*. But the astronomers ignore this alternative, they have decided, once for all and irrevocably *that the sun moves and that at the same time it shall be motionless*. In this manner science loses its reputation and all learnedly technical expressions and formulas are not sufficient to cover the weak part. *The sun cannot be rendered motionless*, and if astronomers and men of science of the present day continue to ignore this fact, they need not be surprised at the inevitable consequences of their own acts.

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The system of Copernicus presupposes the *fixity of the sun*, as a "conditio sine qua non." The most abstruse investigations into the "celestial mechanism" could not be made without this axiom be granted. The mathematician must have a fixed point, a fixed central point of action for his coordinates, he wants fixed invariable plains and closed curves, a radius vector describing plains, he wants axes and poles for the orbits, in order that they may describe certain figures in the heaven, and that the plains of the orbits may move,—one of the other.

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Naturally astronomers and men of science have never asked themselves the question, *how a heavenly body could be fixed in space*.

When an astronomer asserts that the Copernician system is the only possible, he believes that it is impossible for the sun to have any motion of its own; when he at the same time asserts that all astronomy stands or falls with this system, he believes that no astronomical knowledge existed before the discovery of the Copernician system, and with the fall of the system all astronomical knowledge will cease to exist; he believes moreover true astronomy to be *that*, which men of science have imagined to be the truth regarding the heaven and the causes of the phenomena we see.

If astronomers had merely presented their ideas and opinions to the world as such, and no more, no one could raise any objection; but they lay down their opinions in words and on paper as a *positive science*, they give their view as *incontrovertible truths*, and *this fact* alters the situation, for we cannot admit that science is a mere barge to be taken in tow by the imagination.

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The fundamental axiom of astronomical theory, such as the Copernician system, Kepler's and Newton's laws, *are not derived from a knowledge of fact*, they are the opinions, views, ideas and suppositions of individuals, which have been adapted to the heaven, and as they were generally accepted, the question was never raised whether the opinions of an organic creature—however intelligent it might be—are really and truly that which we term penetrating behind the veil of nature and compelling it to yield up its secrets. The fact of no other ideas being at hand which seemed to be better, sufficed to transform these opinions into rules and to cause them to be accepted as the only admissible and correct truths.

The opinions set forth by Copernicus, Kepler and Newton are designed by astronomers of the present day under the collective title of the Copernician system, and they believe that these three dogmas, systems and laws, distinct as they are from each other, proceed consequentially one from the other, that they mutually supplement each the other, and thus form a harmonious whole. That not one of these things rests upon actual observation or even probable and perceptible facts, and finally, that none of them can be observed or verified, but that they are all three creations of the imagination, must be clearly evident to any one who occupies himself at all with the study of nature and more especially with the study of the heavenly phenomena.

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When we say that astronomy is an earthly science, we mean to imply that the heaven and the phenomena there apparent cannot be studied otherwise than as seen from the earth. Therefore astronomy is not a heavenly science, it consists solely of such ideas as we are able to form, that which we see on the heaven.

It is not astronomy that is grand, compared with the vast objects with which it deals it dwindles to insignificance, and we may say that to speak of it as being a science of the "heavenly mechanism," nay more of the "laws of the universe," is sheer nonsense. The *universe* must be for us a mere term, which does not convey any tangible idea to our minds.

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As only a very small portion of the heavenly space and its contents is visible to our eyes, astronomy—whatever may be the magnifying power placed at its disposal—must be confined within the limits of our vision and can therefore be no more than a small fragment.

In the positive sense of the word, astronomy is more especially a science of *observation*, which is its *only*, but real and successful power. It may be said that astronomy has raised observation to a

science, and its immense importance becomes more and more prominent as the explicative science loses in value; which is the more easily accounted for by the fact that observation will finally bring about the overthrow of all untenable theories.

We see the heaven as we fly along, the earth whirls us with itself through space, hence astronomy cannot make any drawing room experiment, it cannot reproduce any of the heavenly phenomena, it can do nothing but *observe*. If therefore the science of astronomy be more especially an observative science, that which it does not and cannot observe, must be for it as good as not existent. But astronomy may, in addition, be designated *the science of observation of the apparent things*, things as they seem to be, for it is unable to see or regard the heavenly phenomena otherwise than they present themselves to it. *Astronomy is not permitted to observe realities.*

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If therefore *observation is itself a science*, it must necessarily *be the basis of theory*; observation may be set aside—which is what is actually done—in this way we may plod on, we may term our labour what we please; but whatever is produced in this way is not astronomy.

But that glorious science whose sublime object is alone able to unfetter the mind of poor humanity—Astronomy—has a future before it. Any such as feel themselves called upon to study *seriously* the phenomena of nature, may set about the task. *The sun is a sure guide.*

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The great mass of astronomical observations are almost exclusively of European origin, those which in later times have been made in other parts of the earth, are of a special character—they refer for the most part to the stars and are not numerous enough to furnish any general view, but here the question is of establishing a universal astronomy available for the whole earth, which, founded on the actual type of the phenomena, will become the result of science.

With respect to astronomical knowledge and its dissemination, the discovery and proving of this type of the phenomena is of the greatest importance, they must be found out not by calculation, but *by actual observation*. When discovered, a large number of important and still undecided problems will be advanced towards solution.

It may be asked: how and where shall we however find this *original type*? and the earth itself supplies the answer by means of its—**Equator**. No observer, placed either north or south the equator, can see the two poles of the heaven at once, he cannot see the *whole heavenly sphere*; at the equator the entire splendour of the firmament passes before his eyes during the space of—12 hours.

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The *equator of the earth* is always turned towards the sun, and it thus indicates the direction taken by our planet; therefore we must be able to find this type *at the equator*. Either it is there, or it is nowhere else, and it is indispensably necessary that astronomical observations made elsewhere should be repeated at the equator thus as it were confirmed.

The erection of small, simple and detached observations along the line of the earth's equator, at certain distances from each other, and the subdivision of the work amongst the various observers, according the objects, would be of incalculable consequence, and would in the course of a few years shed more light upon astronomical knowledge than all that has hitherto been done at hap-hazard and without any plan. An international scientific society could take the matter in hand. Instruments of the most excellent kind are to be had in plenty, and there is no lack of young and intelligent men. Moreover, ever since 1874 there has been established at Quito, the "Observatorio de Collegio Nacional," the director of which Mr. G. B. Menton might superintend the preliminary operations until such time as the work could be prosecuted with greater resources and according to a well considered plan. Such men as *Lick, Bischoffsheim, Remeis etc.*, who are willing to make sufficient sacrifices in order to establish this glorious science upon more solid foundations, which do not rest on an imaginary and untenable theory, *but on actual observation*, will surely be found. Success cannot be doubtful. Would not the Americans, who appreciate every thing on a grand scale and are not afraid of any expense in their undertakings, do all in their power to further and promote this splendid work?^[1]

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If—as is well known—matters are not as they are assumed to be, to what purpose have been and are these laborious works prosecuted and the undying works written? If the imaginary is preferred to reality, we set up an imaginary science, without knowing anything about the heaven, and the science thus set up will become the plaything of fancy.

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If they inquire, why theory denies reality—the *motion of the sun*—we shall find that it is because it prefers the imaginary. *The sun in motion* destroys the found illusions of the astronomers, this they will not submit to, their *untenable theory* must continue to be looked upon as unadulterated truth, and the consequence is that the manifestations of the grand and sublime Nature are put down as lies.

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This idea *of a fixed sun* has taken such a firm hold of men's minds that there is no force in nature capable of exercising sufficient power to eradicate it, the sun may move as it pleases, and whilst the whither and rapidity of its motion are diligently studied, men's minds are occupied *with its fixity*, and these "investigations and inquiries" are prosecuted without any consequences being therefrom deduced. Directly a theory or a law is to be set up, the sun is at once *very firmly fixed* on—**ether**. Astronomical writers consider that they have done quite enough, when they have accorded honorable mention to the motion of the sun, *but their deductions, conclusions, theories, proofs and laws are all based on the immobility of the sun, according the system of Copernicus.*

The idea *that the motion of the sun* does not necessitate any alteration in the system of Copernicus leads us to the utmost absurdity. If the earth is to move in the *invariable plain of its*

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recurrent and closed ellipse, it stands to reason, it cannot follow the sun, and the "circulation around the centre" at once falls to the ground.

It is a very remarkable fact, that the astronomers of the by-gone century could, and those of the present century can believe, such as Copernicus, Kepler and Newton, had they been aware of the motion of the sun, would have set up the same system, the same laws and theories, *as they based exclusively on the theory of its being immovable*. This fact is one of which we are right to be ashamed.

The astronomers hug themselves, with great complacency, with the idea—which gradually becomes a delicious certainty—that they have mapped out the heaven very well, and that any change in the arrangement is a thing not to be thought of. If therefore any one of their fellows should get up—which has sometimes occurred—and say: "it is high time that we should clear up the science and subject this untenable theory to a strict examination and test," the immense majority of facultists and authorities proclaim unanimously "**non possumus**," which is after all but a lingual verification of the first law of the nature^[2].

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Why is it that the astronomers of the present day are unwilling to take into consideration and to study the consequences arising from the motion proper to the sun, with reference to its own system?

Why is it that they are unwilling to recognise or rather to grasp properly and to explain the apperceptible phenomena, which the motion proper to the sun, as seen from the surface of the earth, must produce on the apparently hollow sphere of the heaven?

Monter d'une échoppe à un palais, c'est rare et beau; monter de l'erreur à la vérité, c'est plus rare et c'est plus beau.

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Victor Hugo.

Il arrive fréquemment que la croyance universelle d'un siècle, croyance dont il n'était donné à personne de s'affranchir à moins d'un effort extraordinaire de génie et de courage, devient pour un autre siècle une absurdité si palpable qu'on n'a plus qu'à s'étonner qu'elle ait pu jamais prévaloir.

N. Tschernychewsky.

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Litterature.

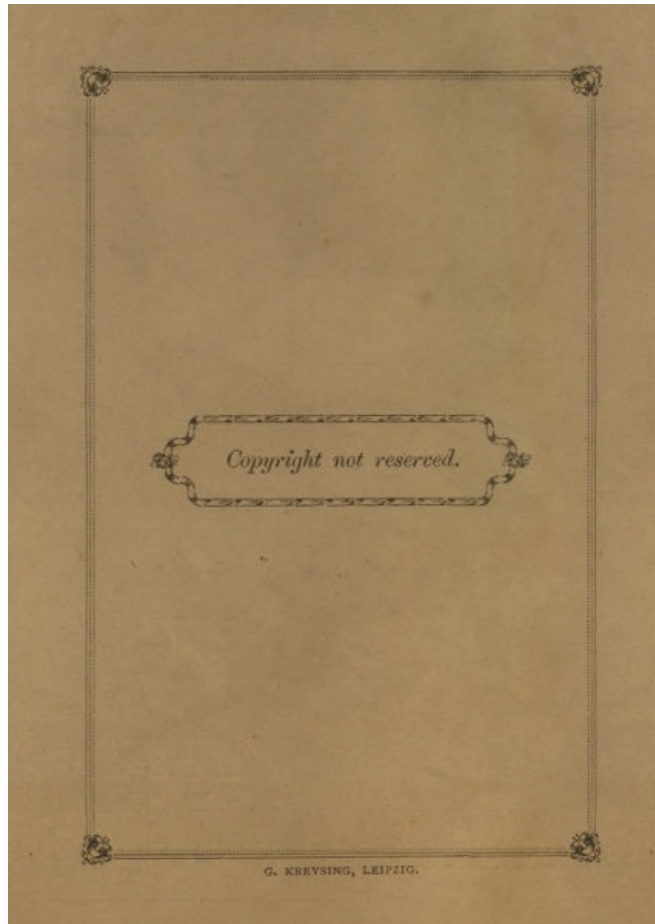
1. **Sta, sol, ne moveare.** *August Tischner.* Leipzig 1881-1882. Gustav Fock.
2. **Grösse, Entfernung und Masse der Sonne.** *August Tischner.* Leipzig 1882. Gustav Fock.
3. **Die Sonne und die Astronomie.** *K. Nagy.* Leipzig 1866. F. A. Brockhaus.
4. **Memoire sur le système solaire et sur l'explication des phénomènes célestes.** *Charles Nagy.* Paris 1862. Leibner.
5. **Considération sur les comètes, éléments de Cométologie.** *Charles Nagy.* Paris 1862. Leibner. [Pg 36]
6. **Système solaire d'après la marche réelle du Soleil.** *E. G. Fahrner.* Paris 2^{me} éd. 1869.
7. **Das wahre Sonnensystem.** Bewegung und Bahnen der Gestirne nach einer neuen Auffassung über dieselben im Himmelsraume, und zwar welche nicht in Ellipsen statt hat. *James Hermann Milberg.* München 1862.
8. **Die wahre Gestalt der Planeten- und Kometenbahnen.** *Friedrick Carl Gustav Stieber.* Dresden 1864.
9. **Die Sonne bewegt sich.** Folgerungen aus dieser Lehre in Bezug auf die Fixsterne und Planeten. *C. R. (ohrbach).* Berlin 1852.
10. **Ueber Veranschauligungsmittel für mathematische Geographie.** Erläuternde Beigabe zu neu construirten Veranschauligungsapparaten für Volksschulen und höhere Unterrichtsanstalten. *F. A. Püschmann,* Seminaroberlehrer, Grimma. [Pg 37]
11. **Der Himmels-Mechanik gänzliche Reform auf Grund der inductiven Logik** mit der strengberechtigten philosophischen und mathematischen Nachweisung. *V. P. Kluk-Kluczycky.* 1880.

G. KREYSING, LEIPZIG.

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FOOTNOTES:

- [1] Moreover, other, smaller detached observatories, might be erected on the east and west coasts of America and Africa, on the islands of Sumatra, Borneo, Celebes and Gilolo, on one of the islands of Gilbert's archipelago and upon one of the Gallopagos islands, if it be considered worth the effort to acquire some real knowledge as to the movement in space of the leader of our planetary system and the bodies pertaining to it.
- [2] Inertia is the most simple and most natural (sic) law of nature which can be imagined. Laplace I p. 4.



The following is a list of changes made to the original. The first line is the original line, the second the corrected one.

Copernicus makes the sun *to be motienless*,
 Copernicus makes the sun *to be motionless*,
~~manner~~ as is indicated in the system of
 manner as is indicated in the system of
 ideas being at hand which seemed ~~be~~ to better,
 ideas being at hand which seemed to be better,
 power. ~~If~~ may be said that astronomy has
 power. It may be said that astronomy has
 upon to ~~sludy~~ *seriously* the phenomena of
 upon to study *seriously* the phenomena of
 for the whole earth, which, founded ~~of~~ the
 for the whole earth, which, founded on the
 and the subdivision of the work ~~amangst~~ the
 and the subdivision of the work amongst the
 If the imaginary is ~~prefered~~ to reality, we
 If the imaginary is preferred to reality, we
 Celebes and Gilolo, on one of the islands ~~ol~~ Gilbert's
 Celebes and Gilolo, on one of the islands of Gilbert's
 or rather to graph ~~propery~~ and to explain
 or rather to grasp properly and to explain

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