

A
PEEP AT THE STARS;

OR, AN

Introduction

TO

ASTRONOMY,

IN RHYME.

“ Thirty days hath September,
April, June, and November ;
February hath twenty-eight alone,
All the rest have thirty and one :
Except in Leap Year, then 's the time
February's days are twenty and nine.”

LONDON :

JOHN HARRIS,

CORNER OF ST. PAUL'S CHURCH-YARD.

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A PEEP AT THE STARS.

CHARLES and Emma along with their mother were walking,
And of all that he saw little Charles still kept talking :
“ I wonder,” he cried, (’twas a fine moonlight night,
The air quite serene, and the stars shining bright,)
“ If the story, my nurse us’d to tell me, be true,
That the old moons, cut up, make the stars which we
view.”

“ That is nonsense,” said Emma, “ the stars, which you
see,
Are as large as the world, that contains you and me ;
And the moon, which is shining so gaily to-night,
Since the world was created has given her light.”
“ What !” cried Charles, “ those small stars, like the sparks
from a rocket !
I think I could put two or three in my pocket !”

“ ’Tis their distance,” said Emma, “ which makes them
look small :

Twenty people can dine in the little gilt ball,
That glitters so bright on the church of St. Paul.
And, you know, your large kite, when aloft in the sky,
Seems a little dark spot, though ’tis full five feet high,
And again it looks large when your string draws it nigh.”

Return'd from their walk, Emma told papa soon
Of Charles's odd notions concerning the moon ;
But added, "I'm sure, the dear boy I can't blame,
For I, if untaught, might have thought just the same ;
And though I peruse your large books with attention,
I don't understand half the things which they mention.

" Their authors allude to the Lion and Bear,
Which I never was able to find in the air,
Though a great many times I have look'd for them there."
"I'm pleas'd," said Papa, "that your thoughts run so high,
As the wonders of Nature which flame in the sky,
And to make them familiar I'll cheerfully try.

" Come, put on your coats, we will run up the hill,
The air is quite clear, and the wind very still :
Bright stars in profusion we then may behold,
And we will not stay long enough there to take cold ;
For when once convinc'd of the things I shall tell,
Our books by the fire will do nearly as well."

VIEW OF THE STARS FROM THE HILL.

“ AND now we stand upon the hill,
Look round about, which way you will,
The earth and sky appear to meet ;
Some stars are level with our feet.

“ My Charles, perhaps, to-morrow night
May wish to find that mass of light ;
I mean those six stars facing me,
The six form something like a Bee:
Give it that insect's name, and then
With ease you'll find those stars again.

“ Another cluster glitters there,
That, Emma, is the Little Bear ;
And that's the Lady in the Chair.
To-morrow night, I have no doubt,
You'll quickly find those clusters out ;
And this you safely may expect,
If forms and names you recollect.

“ The Zodiac's signs we next must view,
Their order, and their titles too.
This zone, or belt, (say which you please,)
Extends in breadth twice eight degrees ;
Th' ecliptic circle runs between,
And stars like animals are seen ;
And in astronomers' relations,
Those figures are call'd Constellations.

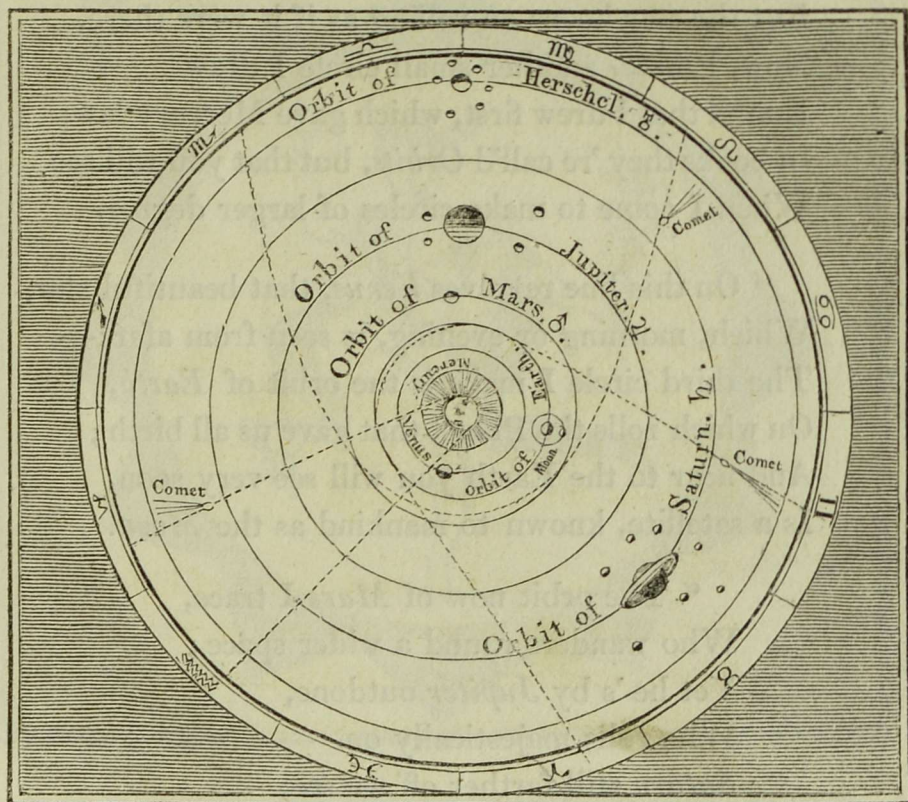
“ Each cluster by a name is known,
And each is by some figure shewn :
The sky too, which you both see here,
In books is call'd *the Concave Sphere*.—
But now return, and I'll explain
Each Sign and Planet by its name.”

Now by the parlour fire seated,
Charles and his sister both intreated
Papa to get his pretty book,
And at the stars to let them look ;
As in the Plate they wish'd to see
If they again could find the Bee.

To this request Papa consented,
Whilst Charles and Emma, quite contented,
Look'd o'er the book with admiration,
And found the little constellation ;
Then of the stars and planets heard,
Desirous not to lose a word.

“ Around the Sun, that source of light,
Some stars are moving day and night ;
These wand'ers your attention claim,
And *Planets* is their proper name :
Others are call'd *Fix'd Stars*, and they
From their position never stray.

“ From *Sol* (this fact you must believe)
The planets all their light receive ;
And as their destin'd course they run
At greater distance from the sun,
It takes a longer time to trace
Their circuit in the realms of space.
And now, that this may clearer be,
The Solar System you shall see.”



THE SOLAR SYSTEM.

“ Look, Charles ! I’ll take a sheet of paper,
 And in the centre draw the *Sun*;
 His face so round, and rays so taper.—
 There, Charles, you see that soon is done.
 A circle now I’ll draw around,
 And *Mercury* will there be found.

“ This circle, of course, Charles, is not in the air,
But the star keeps on rolling as if it were there.
Now, Emma, another small circle I draw
Round that I drew first, which gave Mercury law :
In books they ’re call’d *Orbits*, but that you will see
When I come to make circles of larger degree.

“ On this line revolves *Venus*, that beautiful star,
Which, morning or evening, is seen from afar :—
The third circle I make is the orbit of *Earth*,
On which rolls the Planet that gave us all birth ;
And near to the Earth you will see very soon,
Is a satellite, known to mankind as the *Moon*.

“ The orbit now of *Mars* I trace,
Who wanders round a wider space ;
Yet he ’s by *Jupiter* outdone,
Who rolls majestically on.
Saturn still farther off we see,
His orbit most immense must be ;
And yet a planet lately found,
Call’d *Herschel*, takes a wider round.

“ The last four planets are call’d *Superior*,
Those within Earth’s orbit are the *Inferior* ;
The *Zodiac* ’s the border, as each of you know ;
The track of the *Comet* the curv’d line will shew.
And now as the sketch of our system is done,
The planets at leisure we ’ll view, one by one.”



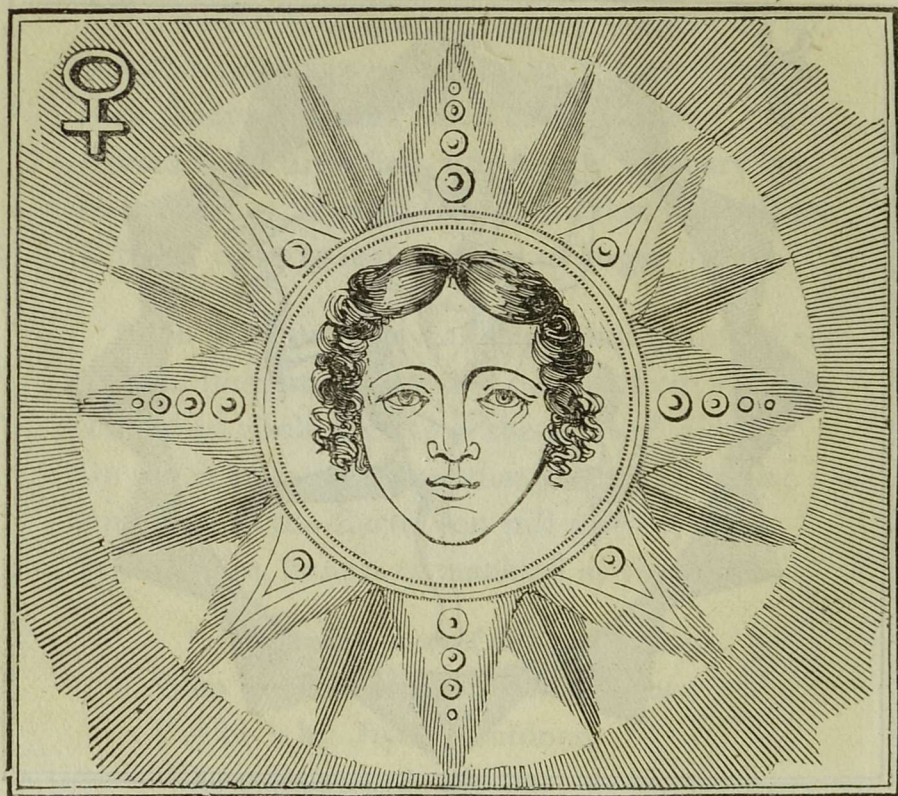
THE PLANET MERCURY.

Diameter, 3200 miles.—Distance from the Sun, 37,000,000 miles.—

Performs its revolution in 87 days, 23 hours, 15 minutes.

PLAC'D nearest the Sun, almost lost in his light,
 Rolls the planet call'd *Mercury*, shining so bright.
 As it moves on so nimbly, it seems it was nam'd
 From that blythe heathen god, who for quickness was
 fam'd ;

And rightly 'tis styled, for it rolls round the Sun
 More than four times as quick as the Earth we are on.

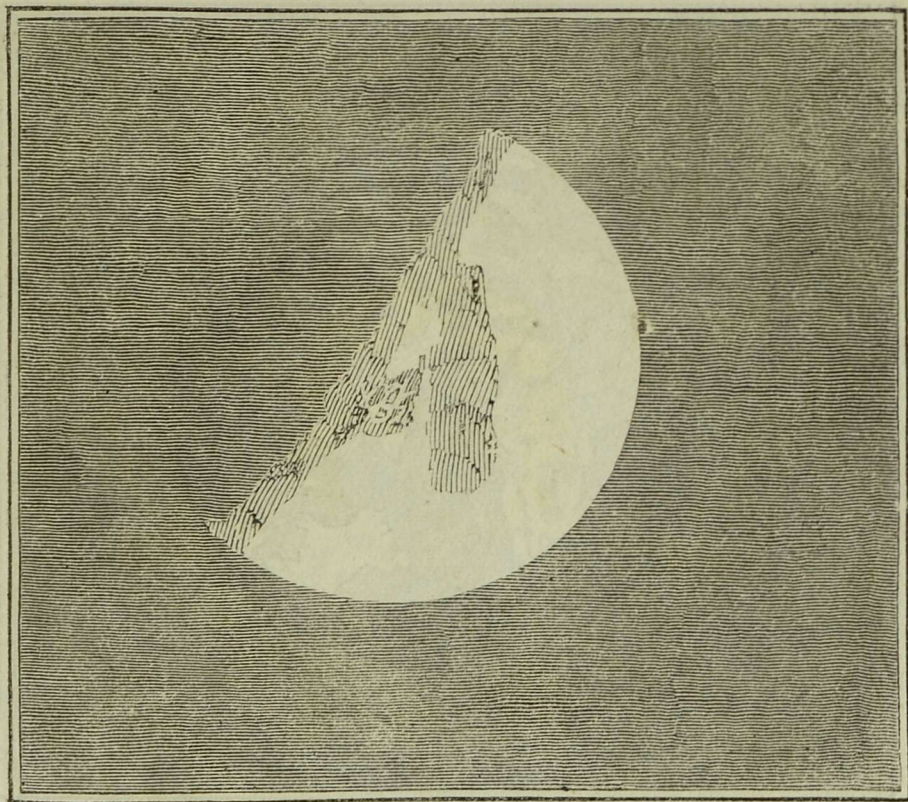


THE PLANET VENUS.

Diameter, 7700 miles. — Distance from the Sun, 69,000,000 miles. —

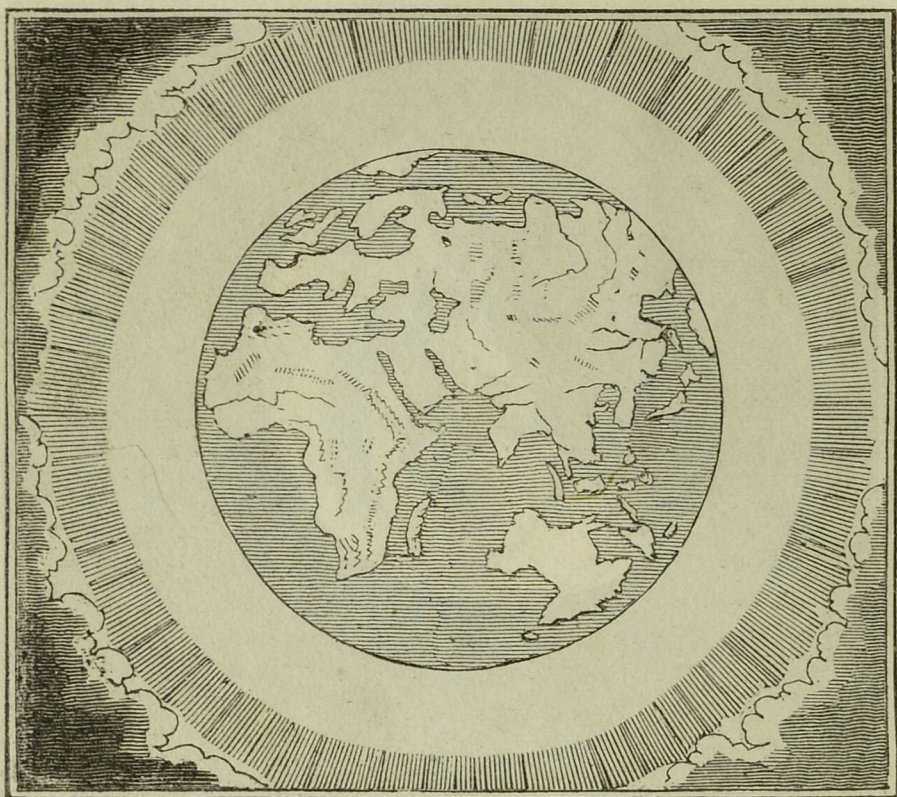
Performs her revolution in 224 days, 16 hours, 49 minutes.

Of all the fine stars which attention excite,
 This planet appears the most beauteous and bright;
 And, therefore, astronomers thought it their duty,
 To give it the name of the fair Queen of Beauty.
 Fam'd Venus, so dazzling, so lucid, and gay,
 Heralds night's near approach, or the dawn of the day.



TELESCOPIC APPEARANCE OF VENUS.

Venus, when she follows the Sun on the eastern side, appears nearly round, but small, being then beyond the Sun. As she moves towards the East, she gradually changes her figure, and when at the greatest distance from the Sun, she appears as above, like the Moon in her first quarter. She afterwards passes through the different stages of decrease, like the Moon, till lost behind the Sun's rays. This planet, at her brightest times, affords a more pleasing telescopic view than any other of the heavenly bodies.



THE PLANET EARTH,

SURROUNDED BY ITS ATMOSPHERE.

This is the supposed appearance our Globe must have
to the Inhabitants of the Moon.

Diameter, 7970 miles. —Distance from the Sun, 95,000,000 miles.—

Performs its revolution in 365 days, 6 hours, 9 minutes.

OUR Earth next rolls amidst the space,
Its circuit round the Sun to trace;
The time it takes to all is known,
By this our Solar Year is shewn.
But I on Earth have more to say,
When we shall speak of Night and Day.



THE MOON,

AS SEEN THROUGH A TELESCOPE.

Diameter, 2161 miles.—Mean Distance from the Earth, 240,000 miles.

Goes round its orbit in 27 days, 7 hours, 43 minutes.

THE Moon, astronomers have shewn,
Is but a planet, like our own ;
And, though she sometimes shines so bright,
Merely reflects the solar light.—
If through a glass you view her face,
Mountains and valleys you may trace.



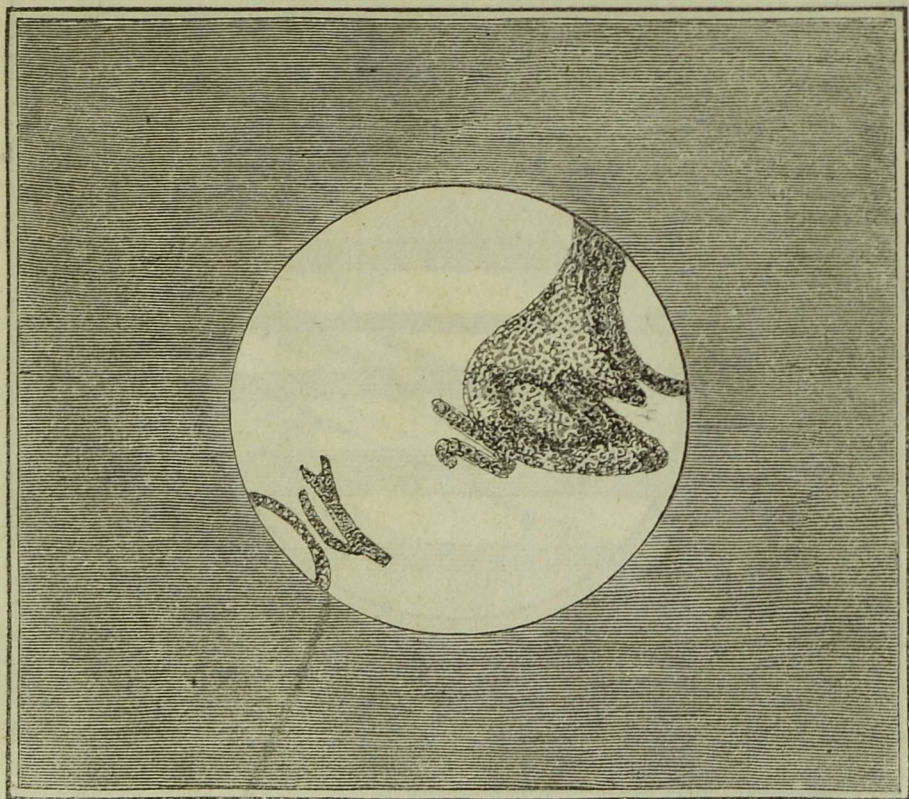
THE PLANET MARS,

THE FIRST SUPERIOR PLANET.

Diameter, 4200 miles.—Distance from the Sun, 144,760,806 miles.—

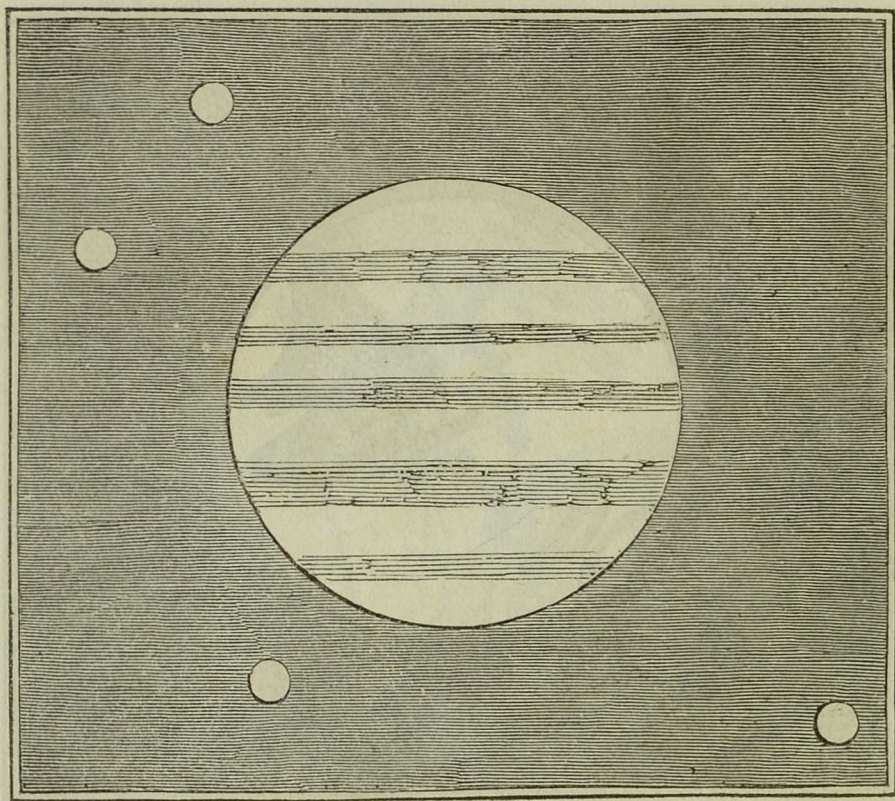
Performs its revolution in 1 year, 321 days, 23 hours, 30½ minutes.

YON star, that looks so red and dun,
Is Mars ; no doubt nam'd after him
Whom Grecians call'd the God of War,
Revengeful in his blood-stain'd car.—
Come, fix your telescope, and see
How large this planet then will be.



TELESCOPIC APPEARANCE OF MARS.

This planet presents a more diversified appearance than any of the others. The spots on its surface are numerous and extensive, and frequently change their shape and arrangement. Mars always appears round and full, except at the time of quadrature, when it appears like the Moon about three days after the full. The very bright spots about his pole are supposed to be occasioned by those parts of his surface being intensely frozen, or covered with snow.



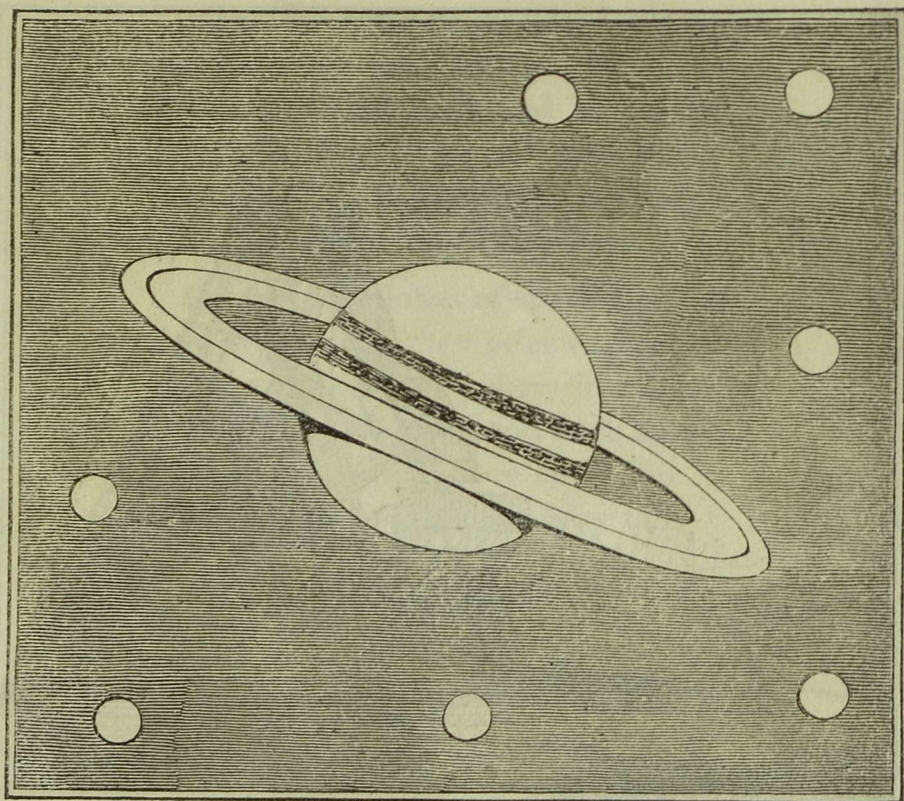
APPEARANCE OF THE PLANET JUPITER, WITH
HIS MOONS, OR SATELLITES,

AS SEEN THROUGH A LARGE TELESCOPE.

Diameter, 90,000 miles.—Distance from the Sun, 494,000,000 miles.—

Performs its revolution in 11 years, 314 days, 10 hours.

THIS mighty planet's splendid ball
Rolls on, in size surpassing all,
Amidst the high and heav'nly spheres :
And Jupiter's great name it bears.
A pow'ful glass its belts will shew,
Its Moons, and their Eclipses too.



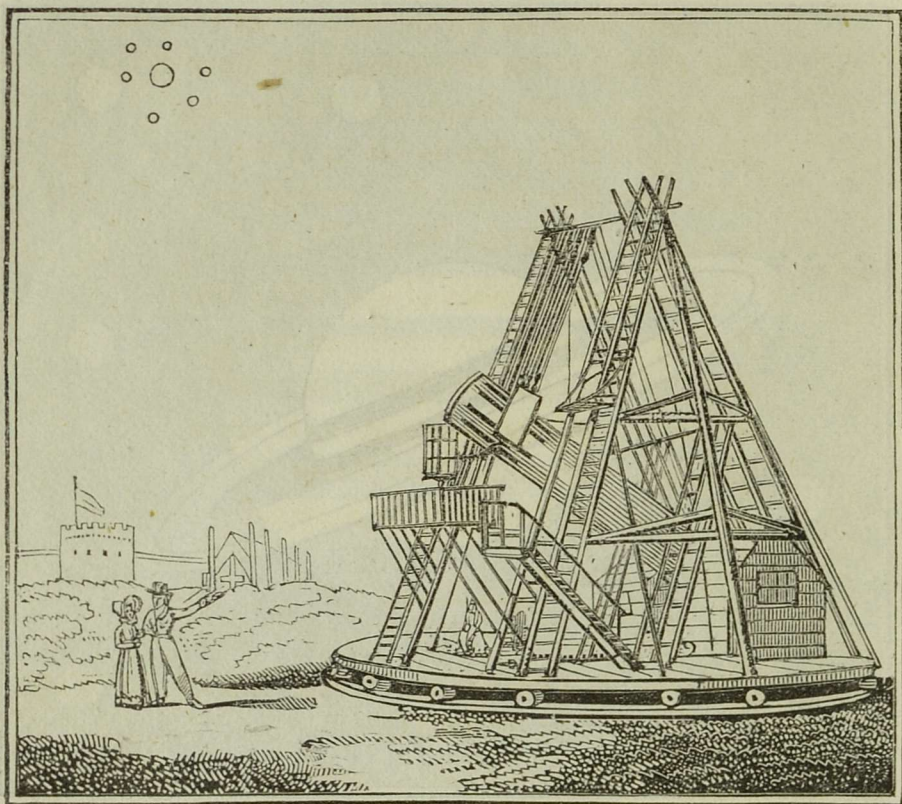
APPEARANCE OF THE PLANET SATURN, WITH
HIS SEVEN SATELLITES,

AS SEEN THROUGH A LARGE TELESCOPE.

Diameter, 77,680 miles.—Distance from the Sun, 906,000,000 miles.—

Performs its revolution in 29 years, 167 days, 6 hours.

GREAT Saturn next revolves around,
And with a splendid ring is bound ;
While sev'n attendant Moons unite,
To furnish him with needful light.
He, trav'ling round the Sun, appears
To take up nearly thirty years.



DR. HERSCHEL'S TELESCOPE, FORTY FEET LONG,
WITH THE PLANET WHICH BEARS HIS NAME.

Diameter, 34,170 miles.—Distance from the Sun, 1,800,000,000 miles.

Performs its revolution in 83 years.

Yon scarce seen planet, lately found
By Doctor Herschel, so renown'd,
Has six attendant Moons, you see,
And dark, without their aid, he'd be.
'Twas call'd the *Georgian Star*, I've heard,
In honour of King George the Third.

now have shewn the stars that rove—
But there are some which never move :
These are call'd fixed, and 'tis known,
The light they give is all their own.
And stars like these, the learned say,
Compose entire the Milky Way.

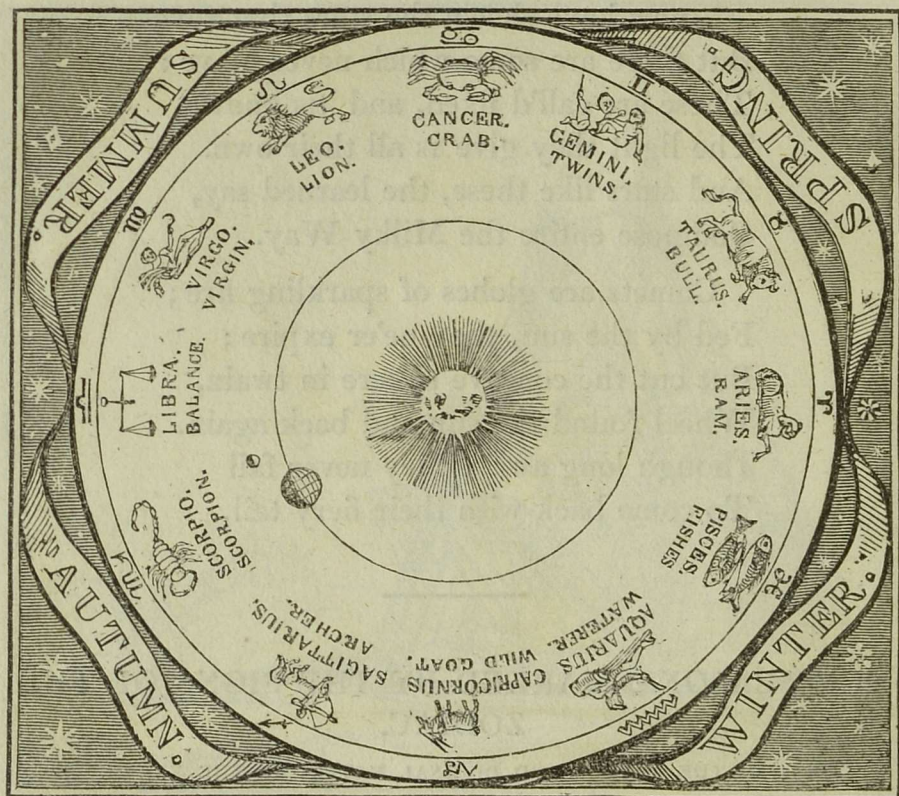
Comets are globes of sparkling fire ;
Fed by the sun, they ne'er expire ;
But cut the concave sphere in twain,
Wheel round the sun and back again.
Though long away, they never fail
To come back with their fiery tail.

THE SEASONS, MARKED BY THE SIGNS OF THE ZODIAC.

WITH THE ANNUAL AND DIURNAL MOTION OF THE EARTH.

WE will now try to shew, by a globe moving round,
The reason that Long Days and Short Days are found ;
And the Seasons will likewise come into our plan,
Which to you, my dear Charles, I'll explain if I can.

I have told you that Earth in its orbit moves on,
In one year, round that luminous centre the Sun ;
And the Signs of the Zodiac, you probably know,
The twelve months of the year are intended to shew ;
Beasts, fishes, and men, in its circle are found,
And each comes in view as the Seasons roll round.
But as drawing will better than talking explain,
I think I must take up my pencil again.



THE SIGNS OF THE ZODIAC.

THE SUN ENTERING TAURUS, OR THE BULL—THE
EARTH PASSING SCORPIO, OR THE SCORPION.

THIS circle I draw, and the signs place around,
Where the Ram, and the Bull, and the Twins may be found;
With the Crab, and the Lion, the Virgin, and Scales,
The Scorpion, and Archer, whose aim never fails:
The Goat, and the Bearer of Water, whose wishes
Incite him at all times to follow the Fishes.
In the drawing annex'd I have tried to define
How the Sun, and the Earth, enter into each sign.
The former in Taurus, the Bull, you may see;
The latter, just opposite, in Scorpio will be:
And these in Conjunction at once you may view,
As each of the bodies one line may pass through.



SPRING.

THE SUN ENTERS OR COMES BETWEEN EARTH AND ARIES
 ♈ THE RAM, ♉ TAURUS THE BULL, AND GEMINI ♊
 THE TWINS.

THUS, when stern Winter quits the scene,
 And flow'rets spring, and trees look green ;
 All nature owns their potent sway,
 The Ram butts Winter quite away ;
 The sturdy Bull and Children twain,
 Give strength and beauty to the plain.



SUMMER.

THE SUN ENTERS CANCER ☊ THE CRAB, LEO ♌ THE LION,
AND VIRGO ♍ THE VIRGIN.

Now, whilst the Crab and Lion reign,
Blithe Summer comes, with jocund train;
Diffusing blessings as it passes,
Amidst the rustic lads and lasses;
Till Virgo bids the fertile field
The long expected harvest yield.



AUTUMN.

THE SUN ENTERS LIBRA ♎ THE SCALES, SCORPIO ♏ THE SCORPION, AND SAGITTARIUS ♐ THE ARCHER.

HAIL! bounteous, gen'rous Autumn, hail!
 Welcome thy Scales and Scorpion's tail.
 With richest grapes now bends the vine,
 Their luscious fruit the trees resign;
 Ere the brisk Archer draws his bow,
 The Winter's near approach to shew.



WINTER.

THE SUN ENTERS CAPRICORNUS ♄ THE GOAT, AQUARIUS
 ♊ THE WATER-CARRIER, AND PISCES ♋ THE FISHES.

Now Winter comes with many a storm,
 The shaggy Goat can scarce keep warm;
 The Water-Carrier grimly lours,
 And deluges the earth with showers;
 Till frost and snow with Pisces reign,
 And skaters glide across the plain.

THE DIURNAL MOTION OF THE EARTH.

As now Earth's annual course my children know,
Its daily motion I must strive to show.

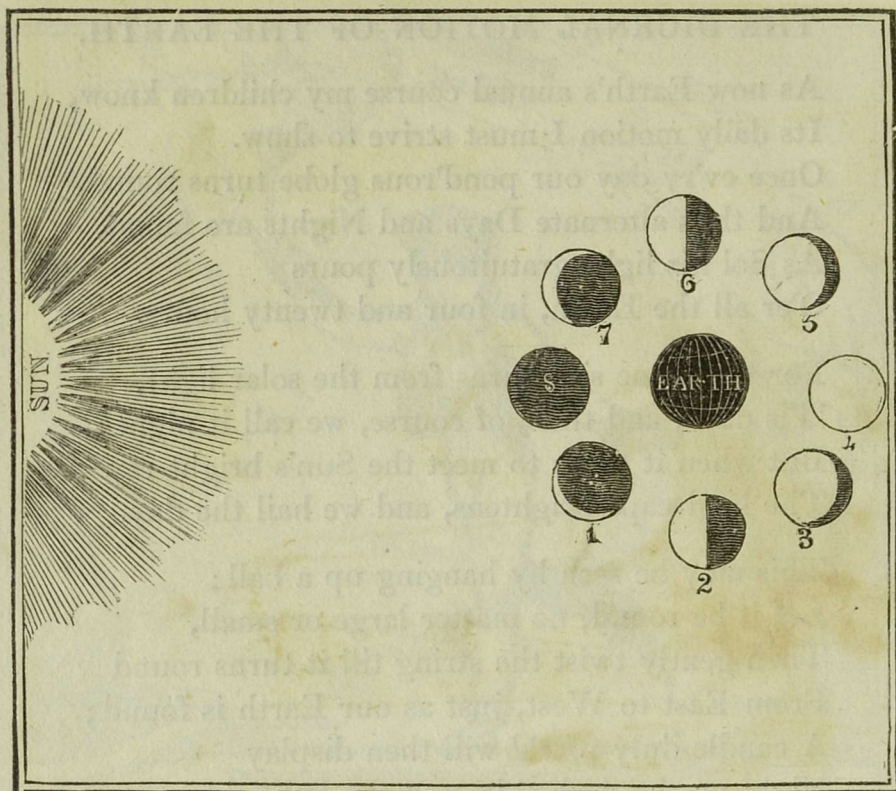
Once ev'ry day our pond'rous globe turns round,
And thus alternate Days and Nights are found,
As Sol his light gratuitously pours
O'er all the Earth, in four and twenty hours.

For when one side turns from the solar light,
'Tis dark, and then, of course, we call it night ;
But when it turns to meet the Sun's bright ray
The landscape brightens, and we hail the day.

This may be seen by hanging up a ball ;
Let it be round, no matter large or small,
Then gently twist the string till it turns round
From East to West, just as our Earth is found ;
A candle duly plac'd will then display
Night on the dark side, and the light side day.

This oval piece of wire if now I take,
An artificial orbit I can make.
One end I raise, the other sink, with care,
Just like the circle Earth describes in air.
This ball, which with a finger may be twirl'd,
Will be a symbol of our planet world.

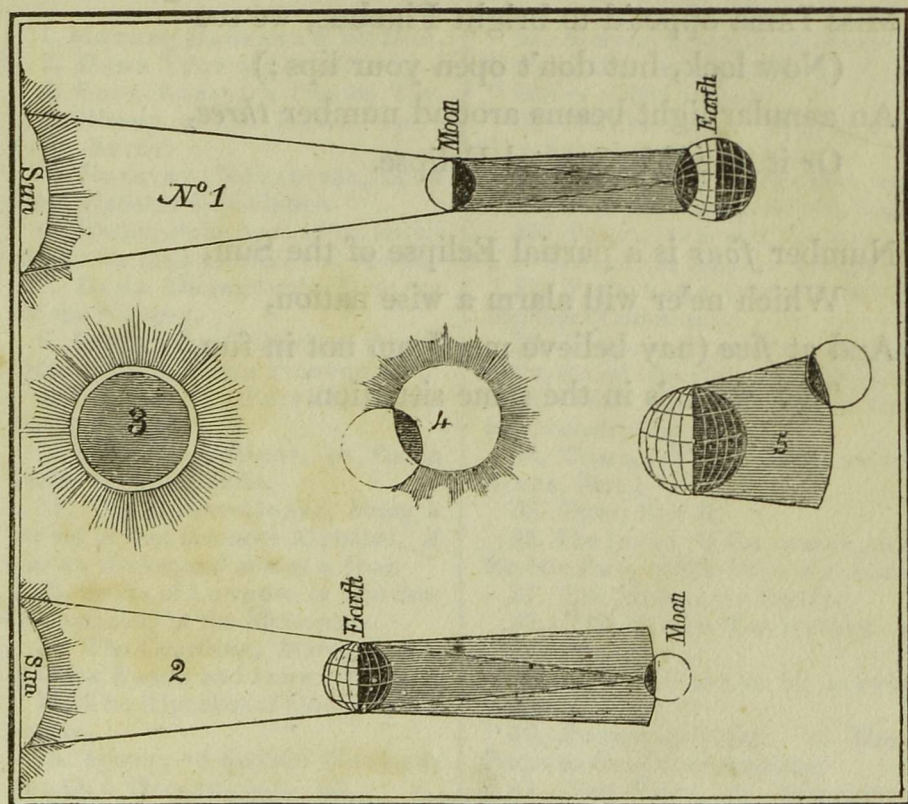
And this, while twisting on a silken string,
Around the circle I will gently bring.
The lighted candle you may call the Sun,
And now, my dears, my handy-work is done.
Observe it well ; that you may gain some notion
Of our Earth's annual and diurnal motion.



PHASES OF THE MOON.

Now first I draw our Planet and the Sun,
 Then the New Moon, which I call number *one*.
 The Half Moon next appears, mark'd number *two*,
 And her first quarter in this form you view.
 The oval shape, which I have number'd *three*,
 Is gibbous call'd, and is well known to me.

Four is the second quarter of the Moon;
 She now is full, and will diminish soon.
 At *five* she's gibbous; and at *six* half seen,
 She through three quarters has already been.
 At *seven* a crescent once more meets the view;
 At *eight* she's dark, and, strictly speaking, new.



SOLAR AND LUNAR ECLIPSE.

THE Sun and the Earth, with the Moon plac'd between,
 In the drawing is mark'd number *one*,
 And, as Sol's usual light is but partially seen,
 This is call'd an Eclipse of the Sun.

The Earth, Sun, and Moon, in conjunction we view,
 And the shade of our Planet find soon ;
 So the figure our artist has stil'd number *two*,
 Describes an Eclipse of the Moon.

Miss Luna oppos'd to bright Phœbus, we see
(Now look, but don't open your lips ;)
An annular light beams around number *three*,
Or it would be a total Eclipse.

Number *four* is a partial Eclipse of the Sun,
Which ne'er will alarm a wise nation,
And at *five* (nay believe me, I am not in fun,)
The Moon 's in the same situation.

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