

# Space in Literature

## Part I

### Purpose

The purpose of these activities is to understand that space has been of cultural importance over the ages, impacting several areas, one of the most significant being that of literature. Further, the purpose is to gain a greater understanding of the Shakespearean sonnet.

Students will be able to

1. Note space references in literature.
2. Write creatively about space.

### Important Vocabulary (key terms in bold)

space	literature	poetry	sonnet
Shakespeare	<b>iambic pentameter</b>	<b>rhyme scheme</b>	<b>rhythm</b>
<b>stanza</b>	<b>quatrain</b>	<b>couplet</b>	

### Universal Poetry

Students write acrostic poems for space-related words.

(\*\* See below for printable activity sheet.)

### Discussing the Cultural Importance of Space

Students engage in a discussion regarding the cultural importance of space over time. How has space figured into world culture? What are some obvious examples of space in popular culture--in art? Music? Film? And what about literature: what are some literary examples, both current and historically?

### Space in Literature

Students read aloud the introduction and [selections from] "Early Space Poetry: What Poets of the 17th through 19th Centuries Had to Say about Other Worlds in Space" by Sylvia Engdahl. (This article can be found online at <http://www.sylviaengdahl.com/space/poetry1.htm>. Students might find reading information on Ms. Engdahl's "Space Subsite" to be very helpful to this discussion as well; find it online at <http://www.sylviaengdahl.com/space.htm>.)

(\*\* See below for printable activity sheet.)

### Shakespeare's Universe

Students discuss William Shakespeare and his use of space-related terms in his work. Students read aloud excerpts from various works by Shakespeare, followed by a discussion of poetic forms, specifically the sonnet.

(\*\* See below for printable activity sheet.)

### What is a Sonnet?

Students discuss how sonnets are written. They note specific terms used when writing sonnets, taking notes as the discussion progresses. Then, students complete a vocabulary worksheet to help them remember and better understand the jargon.

(\*\* See below for printable activity sheet.)

# Shakespeare's Universe

William Shakespeare, whose work first became published in the very late 1500s, is one of many authors who referred to space and astronomy in his plays and poems. Read the following excerpts, samples from selected literary works.

---

Doubt thou the stars are fire; Doubt that the sun doth move; Doubt truth to be a liar; But never doubt I love.

-- *Hamlet*

*Helena*: Monsieur Parolles, you were born under a charitable star.

*Parolles*: Under Mars, I.

*Helena*: I especially think, under Mars.

*Parolles*: Why under Mars?

*Helena*: The wars have so kept you under that you must needs be born under Mars.

*Parolles*: When he was predominant.

*Helena*: When he was retrograde, I think, rather.

*Parolles*: Why think you so?

*Helena*: You go so much backward when you fight.

-- *All's Well That Ends Well*

At first I did adore a twinkling star, But now I worship a celestial sun.

-- *The Two Gentlemen of Verona*

But, soft! what light through yonder window breaks? It is the east, and Juliet is the sun. Arise, fair sun, and kill the envious moon, Who is already sick and pale with grief, That thou her maid art far more fair than she: Be not her maid, since she is envious; Her vestal livery is but sick and green And none but fools do wear it; cast it off. It is my lady, O, it is my love! O, that she knew she were! She speaks yet she says nothing: what of that? Her eye discourses; I will answer it. I am too bold, 'tis not to me she speaks: Two of the fairest stars in all the heaven, Having some business, do entreat her eyes To twinkle in their spheres till they return. What if her eyes were there, they in her head? The brightness of her cheek would shame those stars, As daylight doth a lamp; her eyes in heaven Would through the airy region stream so bright That birds would sing and think it were not night. See, how she leans her cheek upon her hand! O, that I were a glove upon that hand, That I might touch that cheek!

-- *Romeo and Juliet*

O, swear not by the moon, the inconstant moon, That monthly changes in her circled orb, Lest that thy love prove likewise variable.

-- *Romeo and Juliet*

---

Though the excerpts above are from Shakespeare's plays, he also referred to the universe in many of his sonnets. Some examples:

## Shakespeare's Universe (cont'd)

### *Sonnet XIV*

Not from the **STARS** do I my judgment pluck;  
And yet methinks I have **ASTRONOMY**,  
But not to tell of good or evil luck,  
Of plagues, of dearths, or seasons' quality;  
Nor can I fortune to brief minutes tell,  
Pointing to each his thunder, rain and wind,  
Or say with princes if it shall go well,  
By oft predict that I in **HEAVEN** find:  
But from thine eyes my knowledge I derive,  
And, constant **STARS**, in them I read such art  
As truth and beauty shall together thrive,  
If from thyself to store thou wouldst convert;  
Or else of thee this I prognosticate:  
Thy end is truth's and beauty's doom and date.

### *Sonnet XXV*

Let those who are in favour with their **STARS**  
Of public honour and proud titles boast,  
Whilst I, whom fortune of such triumph bars,  
Unlook'd for joy in that I honour most.  
Great princes' favourites their fair leaves spread  
But as the marigold at the **SUN**'s eye,  
And in themselves their pride lies buried,  
For at a frown they in their glory die.  
The painful warrior famoused for fight,  
After a thousand victories once foil'd,  
Is from the book of honour razed quite,  
And all the rest forgot for which he toil'd:  
Then happy I, that love and am beloved  
Where I may not remove nor be removed.

## Shakespeare's Universe (cont'd)

### *Sonnet XXXV*

No more be grieved at that which thou hast done:  
Roses have thorns, and silver fountains mud;  
**CLOUDS** and **ECLIPSES** stain both **MOON** and **SUN**,  
And loathsome canker lives in sweetest bud.  
All men make faults, and even I in this,  
Authorizing thy trespass with compare,  
Myself corrupting, salving thy amiss,  
Excusing thy sins more than thy sins are;  
For to thy sensual fault I bring in sense--  
Thy adverse party is thy advocate--  
And 'gainst myself a lawful plea commence:  
Such civil war is in my love and hate  
That I an accessory needs must be  
To that sweet thief which sourly robs from me.

### *Sonnet XXI*

So is it not with me as with that Muse  
Stirr'd by a painted beauty to his verse,  
Who **HEAVEN** itself for ornament doth use  
And every fair with his fair doth rehearse  
Making a couplement of proud compare,  
With **SUN** and **MOON**, with **EARTH** and sea's rich gems,  
With April's first-born flowers, and all things rare  
That **HEAVEN**'s air in this huge rondure hems.  
O' let me, true in love, but truly write,  
And then believe me, my love is as fair  
As any mother's child, though not so bright  
As those gold candles fix'd in **HEAVEN**'s air:  
Let them say more than like of hearsay well;  
I will not praise that purpose not to sell.

# Early Space Poetry

What poets of the 17th through 19th centuries  
had to say about other worlds in space

*Collected and annotated by Sylvia Engdahl*

It's commonly assumed that belief in other inhabited worlds, especially worlds in other solar systems, is a relatively modern idea, which didn't become prevalent until the 20th century -- many today even think it was originated by science fiction. But in fact, from the mid-17th century through 19th almost all educated people believed that the stars are suns surrounded by inhabited planets. This belief wasn't seriously questioned until the late 19th century, and was out of favor with the majority only for a short period roughly corresponding to the time between World Wars I and II.

In the early 1970s, while doing research for my nonfiction book [\*The Planet-Girded Suns: Man's View of Other Solar Systems\*](#) (part of which is now online here) I collected quite a bit of poetry from earlier centuries that reveals what was thought about other planets. Much such poetry is by writers -- many of them didactic writers -- who are forgotten today, so a few stanzas by famous poets are often cited as if they were rare exceptions displaying prophetic vision. Actually, these familiar ones are typical of the vast amount of such verse that appeared in popular publications of their day. In many cases I've seen only fragments of poems, quoted by scholars of literature; in others I've taken brief passages from long (sometimes book-length) works that are particularly relevant. This collection has been stashed away in my files for 30 years -- I'm posting portions of it now in case others may find them as fascinating as I do.

Why do these views of the past about the universe matter today?  
Because, I think, they demonstrate that people have been aware of planets beyond Earth, and have been deeply attracted to them, for a

appears to be an instinctive human longing.

In the 18th century, of course, it was assumed that there could never be actual contact with other worlds; but the people who believed in their existence couldn't bear to think that nobody would ever find out more than could be learned through telescopes, and so they envisioned the souls of men like Newton -- and eventually, their own souls -- voyaging through space and seeing those worlds at close range on their way to Heaven. A great many poems were written on this theme; it was the first form in which space travel was seriously imagined by the public (stories of trips to the moon in that era, though popular, were either fantasy or satire on earthly affairs). People felt deep emotions about the idea. The late 19th and early 20th centuries, when literal belief in an afterlife declined, coincided with the time when belief in many inhabited solar systems began to fade. I've always felt that this was a kind of "sour grapes" response -- or rather, a perhaps- comforting conclusion that there aren't any grapes on vines beyond our reach. It's significant that the conviction that millions of extrasolar planets exist didn't become widespread again until radio astronomers began to have hope of receiving messages from them, and that as time passes without evidence of extraterrestrial intelligence, the pendulum seems to be swinging again toward theories that Earth may be unique.

In any case, a strong sense of our kinship with a vast inhabited universe has prevailed during most of the decades for the past 350 years, and these poems are evidence of its existence before the 20th century. Dozens of poets -- and no doubt more whose works aren't accessible, as well as those who wrote in languages other than English -- referred briefly to planets circling other suns, usually in a religious context as evidence of God's power. I've limited what is included here

in order of date.

(If you're looking for well-known poets such as Shelley, Byron, Tennyson and Whitman, you may want to skip to [Part II, 19th Century](#).)

## 17th Century

### From William Drummond, "The Shadow of the Judgment" (1630)

Drummond viewed the discovery of new stars (novas) as an omen of the end of the world, a belief common in his time when the heavens were thought to be unchanging -- but this sounds very much like today's all-too-real fear that we, like the dinosaurs, may someday be destroyed by an asteroid.

. . . They which dream

An everlastingness in world's vast frame,  
Think well some region where they dwell may wrack,  
But that the whole nor time nor force can shake;  
Yet, frantic, muse to see heaven's stately lights,  
Like drunkards, wayless reel amidst their heights.

.....

Alas! say they, what boots our toils and pains?  
Of care on earth is this the furthest gains?  
No riches now can bribe our angry fate,  
O no! to blast our pride the heavens do threat;  
In dust now must our greatness buried lie,  
Yet it is comfort with the world to die.

From out their grandam Earth they fain would fly,  
But whither know not, heavens are far and high.

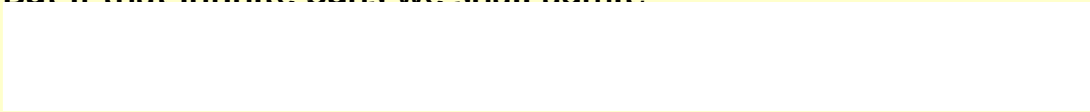
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From Henry More, "Democritus Platonissans, or an Essay Upon  
the Infinity of Worlds" (1647)

And as the Planets in our world (of which  
The sun's the heart and kernal) do receive  
Their nightly light from suns that do enrich  
Their sable mantle with bright gemmes, and give  
A goodly splendour, and sad men relieve  
With their fair twinkling rayes, so our world's sunne  
Becomes a starre elsewhere, and doth derive  
Joynt light with others, cheareth all that won  
In those dim duskish Orbs round other suns that run.

This is the parergon of each noble fire  
Of neighbor worlds to be the nightly starre,  
But their main work is vitall heat t'inspire  
Into the frigid spheres that 'bout them fare;  
Which of themselves quite dead and barren are,  
But by the wakening warmth of kindly dayes,  
And the sweet dewie nights, in due course raise  
Long hidden shapes and life, to their great Maker's praise.

These with their suns I severall worlds do call,  
Whereof the number I deem infinite:  
Else infinite darkness were in this great Hall  
Of th'endlesse Universe; for nothing finite  
Could put that immense shadow into flight.  
But if that infinite Suns we shall admit.



And have some mark for his farre-shining shafts to hit.

.....

And if these globes be regions of life  
And several kinds of plants therein do grow,  
Grasse, flowers, hearbs, trees, which the impartial knife  
Of all consuming Time still down doth mow,  
And new again doth in succession show;  
Which also's done in flies, birds, men and beasts;  
Adde sand, pearls, pebbles, that the ground do strow,  
Leaves, quills, hairs, thorns, blooms; you may think the rest  
Their kinds by mortal penne cannot be well exprest.

---

From John Dryden, *Annus Mirabilis* (1666)

Instructed ships shall sail to quick Commerce;  
By which remotest Regions are alli'd:  
Which makes one City of the Universe,  
Where some may gain, and all may be suppli'd.

Then, we upon our Globe's last verge shall go,  
And view the Ocean leaning on the sky:  
From thence our rolling Neighbours shall we know,  
And on the Lunar world securely pry.

---

From John Milton, *Paradise Lost* (1667)

Though most of the imagery of *Paradise Lost* is based on the pre-Copernican conception of the universe, Milton did refer to the belief in inhabitants of the moon and worlds of other suns in several passages such as this one, spoken by an angel to Adam.

. . . What if that light

Sent to her through the wide transpicious air.

**This Earth--reciprocal, if land be there,  
Fields and inhabitants? Her spots thou seest  
As clouds, and clouds may rain, and rain produce  
Fruits in her softened soil, for some to eat  
Allotted there; and other Suns, perhaps,  
With their attendant Moons, thou wilt descry,  
Communicating male and female light,  
Which two great sexes animate the World,  
Stored in each Orb perhaps with some that live.  
For such vast room in Nature unpossessed  
By living soul, desert and desolate,  
Only to shine, yet scarce to contribute  
Each orb a glimpse of light, conveyed so far  
Down to this habitable, which returns  
Light back to them, is obvious to dispute.  
But whether thus these things, or whether not--**

.....

**Solicit not thy thoughts with matters hid:  
Leave them to God above; him serve and fear;  
Of other creatures as him pleases best,  
Wherever placed, let him dispose . . .  
Dream not of other worlds, what creatures there  
Live, in what state, condition, or degree.**

---

### 18th Century

**From Lady Mary Chudleigh, "The Song of the Three Children  
Paraphras'd" (1703)**

Fashionable ladies of the early 18th century were extremely interested in other suns and their planets, having been inspired by Fontenelle's *Conversations on the Plurality of Worlds* (1686), a book specifically directed to women.

Note: Here, "liquid air" and "aether" refer to Descartes' theory that space is filled with a fluid substance that flows into vortices, which was how the motion of planets was explained before Newton introduced the concept of gravity.

Ye glittering Stars, who float in liquid Air,  
Both ye that round the Sun in different Circles move,  
And ye that shine like Suns above;  
Whose Light and Heat attending Planets share:  
In your high Stations your Creator praise,  
While we admire both him and you;  
Tho' vastly distant, yet our Eyes we raise,  
And wou'd your lofty Regions view;  
Those immense Spaces which no Limits know,  
Where purest Aether unconfin'd doth flow;  
But our weak Sight cannot such Journies go:  
'Tis Thought alone the Distance must explore;  
Nothing but That to such a Height can soar,  
Nothing but That can thither wing its Way,  
And there with boundless Freedom stray,  
And at one View ten thousand sparkling Orbs survey,  
Innumerable Worlds and dazzling Springs of Light.  
O the vast Prospect! O the charming Sight!  
How full of Wonder, and Delight!  
How mean, how little, does our Globe appear!  
This object of our Envy, Toil and Care,  
Is hardly seen amidst the Crowd above;  
There, like some shining Point, does scarce distinguish'd move.

---

From Sir Richard Blackmore, *The Creation: a Philosophical Poem  
in Seven Books* (1712)

Yet is this mighty system, which contains  
So many worlds, such vast ethereal plains,  
But one of thousands, which compose the whole,  
Perhaps as glorious, and of worlds as full.

Which by the tube astronomers explore:  
And millions which the glass can ne'er descry,  
Lost in the wilds of vast immensity;  
Are suns, are centres, whose superior sway  
Planets of various magnitudes obey.

.....

As this inferior habitable seat  
By different parts is made one whole complete;  
So our low world is only one of those,  
Which the capacious universe compose.  
Now to the universal whole advert;  
The Earth regard as of that whole a part,  
In which wide frame more noble worlds abound;  
Witness, ye glorious orbs, which hang around,  
Ye shining planets, that in ether stray.  
And thou, bright lord and ruler of the day!  
Witness, ye stars, which beautify the skies,  
How much do your vast globes, in height and size,  
In beauty and magnificence, outgo  
Our ball of Earth, that hangs in clouds below!  
Between yourselves, too, is distinction found,  
Of different bulk, with different glory crown'd;  
The people, which in your bright regions dwell,  
Must this world's low inhabitants excel;  
And since to various planets they agree,  
They from each other must distinguished be,  
And own perfections different in degree.

.....

We may pronounce each orb sustains a race  
Of living things adapted to the place.  
Were the refulgent parts, and most refine'd



**At distance only hung to shine by night?  
And with their twinkling beams to please our sight?  
How many roll in ether, which the eye  
Could n'er, till aided by the glass, descry;  
And which no commerce with the Earth maintain!  
Are all these glorious empires made in vain?**

**Note: Until the late 19th century virtually all writing about other planets, poetry and prose alike, was focused on the conviction that their existence demonstrated the glory and power of God; the belief that they were inhabited was based on an unquestioned premise that God wouldn't have created a world "in vain" -- that is, of no use to anyone.**

**Blackmore's reference to this world as "base" (in the sense of debased or degraded) is a holdover from pre-Copernican cosmology, in which Earth occupied the center of the universe -- not the best place, as is often assumed, but the worst except for hell, which was envisioned at its core. The spheres of the stars were thought to be perfect and unchanging, while Earth and its irregular features (such as mountains) were considered to have been corrupted as a result of the "Fall" of man.**

---

**From Matthew Prior, *Solomon on the Vanity of the World, a Poem in Three Books* (1718)**

**Now if the Sun to Earth transmits his ray,  
Yet does not scorch us with too fierce a day;  
How small a portion of his pow'r is giv'n  
To orbs more distant, and remoter Heav'n?  
And of those stars, which our imperfect eye  
Has doom'd, and fix'd to one eternal sky,  
Each by a native stock of honor great,  
May dart strong influence, and diffuse kind heat.**

**Around the circles of their ambient skies  
New moons may grow or wane, may set or rise;  
And other stars may to those suns be earths;  
Give their own elements their proper births;  
Divide their climes, or elevate their pole,  
See their lands flourish, and their oceans roll;  
Yet these great orbs thus radically bright,  
Primitive founts, and origins of light,  
May each to other (as their diff'rent sphere  
Makes or their distance, or their height appear)  
Be seen a nobler, or inferior star;  
And in that space, which we call air and sky,  
Myriads of earths, and moons, and suns may lye  
Unmeasur'd, and unknown by human eye.**


---

**From Allan Ramsay, "An Ode to the Memory of Sir Isaac Newton"  
(1727)**

**This is one of many poems expressing the conviction that so great a man of  
Newton would surely be able to see other planets at close range on his way to  
Heaven.**

**The God-like man now mounts the sky,  
Exploring all yon radiant spheres;  
And with one view can more descry,  
Than here below in eighty years.**

**Tho' none, with greater strength of soul,  
Could rise to more divine a height,  
Or range the orbs from pole to pole,  
And more improve the humane sight.**



**That countless in the Milky Way  
Only through glasses shew their rays.**

---

**From David Mallet, *The Excursion: a Poem in Two Books* (1728)**

**This poem devotes many pages to the journey of Newton's soul through space after his death. It describes the planets of our solar system at length in a portion that I don't have.**

**Ten thousand worlds blaze forth; each with his train  
Of peopled worlds...**

.....

**But how shall mortal wing  
Attempt this blue profundity of Heaven,  
Unfathomable, endless of extent!  
Where unknown suns to unknown systems rise,  
Whose numbers who shall tell? stupendous host!  
Sun beyond sun, and world to world unseen,  
Measureless distance, unconceiv'd by thought!  
Awful their order; each the central fire  
Of his surrounding stars, whose whirling speed,  
Solemn and silent, through the pathless void,  
Nor change, nor error knows. But, their ways,  
By reason, bold adventurer, unexplor'd,  
Instructed can declare! What search shall find  
Their times and seasons! their appointed laws,  
Peculiar! their inhabitants of life,  
And of intelligence, from scale to scale  
Harmonious rising and in fix'd degree;  
Numerous orders, each resembling each,  
Yet all diverse!**



Dazzling the view; here nameless worlds afar,  
Yet undiscover'd: there a dying Sun,  
Grown dim with age, whose orb of flame extinct,  
Incredible to tell! thick, vapory mists,  
From every shore exhaling, disspreading slow,  
And deepening shade on shade; till the faint globe,  
Mournful of aspect calls in all his beams.  
Millions of lives, that live but in his light,  
With horror see, from distant spheres around,  
The source of day expire, and all his worlds  
At once involv'd in everlasting night!

---

From James Thomson, *The Seasons* (1730; this ed. 1746)

Uneducated people of Thomson's time believed comets were portents of the end of the world, an idea even more prevalent in the previous century. Those who were aware of the new astronomical discoveries knew better, but still had little idea of the real nature of comets -- hence his speculation that they might "lend new fuel to declining suns."

. . . Amid the radiant orbs,  
That more than deck, that animate the sky,  
The life-infusing suns of other worlds,  
Lo! from the dread immensity of space  
Returning, with accelerated course,  
The rushing Comet to the Sun descends;  
And as he sinks below the shading earth,  
With awful train projected o'er the heavens,  
The guilty nations tremble. But, above  
Those superstitious horrors that enslave  
The fond sequacious herd, to mystic faith  
And blind amazement prone, the enlighten'd few,  
Whose godlike minds Philosophy exalts

That wondrous force of thought, which mounting spurns  
This dusky spot, and measures all the sky;  
While, from his far excursion through the wilds  
Of barren ether, faithful to his time,  
They see the blazing Wonder rise anew,  
In seeming terror clad, but kindly bent  
To work the will of all-sustaining Love;  
From his huge vapoury train perhaps to shake  
Reviving moisture on the numerous orbs  
Through which his long ellipsis winds; perhaps  
To lend new fuel to declining Suns,  
To light up worlds, and feed the eternal fire.

---

From Robert Gambol, *The Beauties of the Universe* (1732)

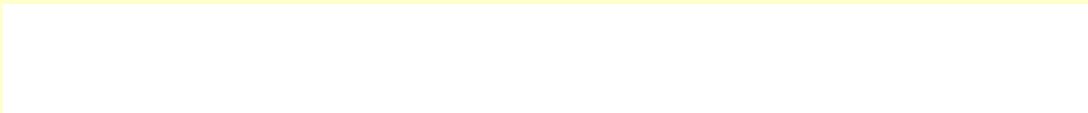
These lines are typical of the view expressed by numerous poets who described "cosmic journeys" of departed souls. The soul, Gambol says:

Unbounded in its ken, from prison free  
Will clearly view what here we darkly see:  
Those planetary worlds, and thousands more,  
Now veil'd from human sight, it shall explore.

---

From Alexander Pope, *An Essay on Man* (1733-1734)

This often-quoted passage is not, as is sometimes thought, an unusually early acknowledgement that other worlds exist; it's criticism of the practice, already common by 1733, of devoting lengthy poems (as well as prose) to speculation about other solar systems -- an elaboration of his theme that "the proper study of mankind is Man."



He who thro' vast immensity can pierce,  
See worlds on worlds compose one universe,  
Observe how system into system runs,  
What other planets circle other suns,  
What varied being peoples every star,  
May tell why Heav'n has made us as we are.

.....

Whate'er of life all-quick'ning aether keeps,  
Or breathes thro' air, or shoots beneath the deeps,  
Or pours profuse on earth, one Nature feeds  
The vital flame, and swells the genial seeds.

---

From Henry Brooke, *Universal Beauty* (1735)

Through various worlds still varying species range,  
While order knits, and beautifies by change;  
While from th'Unchangeable, the One, the Wise  
Still changing emanations rise,  
Of substance duplicate, or triple, mix'd,  
Single, ambiguous, or free, or fix'd;  
From those array'd in Heaven's resplendent robes,  
To the brute essence on terrestrial globes.

.....

One house, one world, one universe divine,  
Where countless orbs through countless systems shine;  
Systems, which view'd throughout the circuit wide,  
Or lost, or scarce the pointed sight abide,  
(Through space immense with diminution seen)  
Yet boundless to those worlds that roll within;  
Each world as boundless to its native race,  
That range and wanton through its ample space,  
Frequent, through fields, through clouds of fragrance stray,  
Or skim the wat'ry or ethereal way.

---

**From Moses Browne, "An Essay on the Universe" (1739)**

Browne declared his purpose in this poem was to lead the ladies "to read deep systems" and range from Earth "to stars and suns of boundless space. He offered detailed information about the planets in our solar system, suggesting they might be inhabited:

**With creatures, suited to their various seat,  
Intense degrees of cold or heat to bear,  
Of light, or gloom, a pleasing, proper share,  
To them agreeable, by nature blest,  
Painful, howe'er, imagin'd to the rest.**


Browne thought Sirius to be the nearest star (based on the calculation of Huygens) and that its distance is more "than mind can soar," to imagine stars still more distant from Earth was to him "a perplexing thought":

**Farther from this, than this from earth is plac'd,  
Th' ethereal regions with new orbs are grac'd;  
Farther than those from this, fresh numbers still  
The depths of lost infinity may fill...  
What can they be? (thus self-illustrious shown)  
What, less than suns? resembling each our own.  
.....  
Have each (a sov'reign in his system's bound)  
Their lighted earths, and moons, revolving round,  
Inhabitable all? their plants and flow'rs?  
Their insects, animals, and reasoning pow'rs?**

---

**From John Armstrong, *The Art of Preserving Health* (1744)**

**This huge rotundity we tread grows old;  
And all the worlds that roll around the Sun,  
The Sun himself, shall die, and ancient Night**



Extend his arm to light another world,  
And bid new planets roll by other laws.  
For through the regions of unbounded space,  
Where unconfin'd Omnipotence has room,  
Being, in various systems, fluctuates still  
Between creation and abhorr'd decay:  
It ever did, perhaps and ever will.  
New worlds are still emerging from the deep;  
The old descending, in their turns to rise.

---

From Edward Young, *Night Thoughts on Life, Death and Immortality* (1742-1745)

This book-length poem was extremely popular and had many editions; a 19th-century editor wrote that "It is to be seen on the shelf of the cottager with the Family Bible and Pilgrim's Progress" and that Napoleon was said to be particularly fond of it. Hundreds of lines are relevant, though often expressed in terms of religious imagery; these excerpts are just a sample. They contain the earliest expression I've found of the idea that inhabitants of other worlds may be more mature (rather than simply superior) to us, and may have outgrown war.

. . . 'Tis thus the skies

Inform us of superiors numberless,  
As much, in excellence, above mankind,  
As above earth, in magnitude, the spheres.

.....

The soul of man was made to walk the skies;  
Delightful outlet of her prison here!  
There, disincumber'd from her chains, the ties  
Of toys terrestrial, she can rove at large;  
There, freely can respire, dilate, extend,  
In full proportion let loose all her pow'rs;  
And undeluded grasp at something great



So distant, (says the sage) 'twere not absurd  
To doubt, if beams set out at nature's birth,  
Are not yet arrived at this so foreign world;  
Though nothing half so rapid as their flight.

.....

Is this the sole exploit, the single birth,  
The solitary son, of Power Divine?  
Or has th' Almighty Father, with a breath,  
Impregnated the womb of distant space?  
Has He not bid, in various provinces,  
Brother-creations the dark bowels burst  
Of night primeval; barren, now, no more?

.....

Is not this home creation, in the map  
Of universal nature, as a speck,  
Like fair Britannia in our little ball;  
Exceeding fair, and glorious for its size,  
But, elsewhere, far outmeasured, far outshone?  
In fancy (for the fact beyond us lies,)  
Canst thou not figure it an isle, almost  
Too small for notice, in the vast of being;  
Sever'd by mighty seas of unbuilt space  
From other realms; from ample continents  
Of higher life, where nobler natives dwell.

.....

. . . On nature's Alps I stand,  
And see a thousand firmaments beneath!  
A thousand systems, as thousand grains!  
So much a stranger, and so late arriv'd,  
How can man's curious spirit not inquire,  
What are the natives of this world sublime.



"O ye, as distant from my little home,  
As swiftest sun-beams in an age can fly!  
Far from my native element I roam,  
In quest of new, and wonderful, to man.  
What province this, of His immense domain,  
Whom all obey? Or mortals here, or gods?  
Ye bord'ers on the coast of bliss! what are you?  
A colony from heav'n? Or, only raised,  
By frequent visit from heav'n's neighboring realms  
To secondary gods, and half divine?--  
Whate'er your nature, this is past dispute,  
Far other life you live, far other tongue  
You talk, far other thought, perhaps, you think,  
Than man. How various are the works of God!  
But say, What thought? Is reason here enthroned,  
And absolute? or sense in arms against her?

.....

. . . Know you disease  
Or horrid war? With war, this fatal hour  
Europa groans (so call we a small field,  
Where kings run mad.)

.....

With you, can rage for plunder make a god?  
And bloodshed wash out ev'ry other stain?  
But you, perhaps, can't bleed: from matter gross  
Your spirits clean, are delicately clad  
In fine-spun ether, privileged to soar,  
Unloaded, uninfected; how unlike  
The lot of man! How few of human race  
By their own mud unmurder'd! How we wage  
Self-war eternal! Is your painful day



**Who disaffect reversions, as with us?  
But what are we? You never heard of man;  
Or earth; the bedlam of the universe!**

---

**From Mikhail Lomonosov, "Evening Meditations on Seeing the  
Aurora Borealis" (1743) Translated from Russian.**

**Science tells me that each twinkling star  
That smiles above us is a peopled sphere,  
Or central sun, diffusing light afar;  
A link of nature's chain. . . .**

**Vain is the inquiry--all is darkness, doubt:  
This earth is one vast mystery to man.  
First find the secrets of this planet out,  
Then other planets, other systems scan!**

---

**From Soame Jenyns, "An Essay on Virtue" (1752)**

**. . . Soul and sense diffus'd thro' ev'ry place  
Make happiness as infinite as space;  
Thousands of suns beyond each other blaze,  
Orbs roll o'er orbs, and glow with mutual rays;  
Each is a world, where form'd with wondrous art,  
Unnumber'd species live thro' every part:  
In ev'ry tract of ocean, earth, and skies,  
Myriads of creatures still successive rise;  
Scarce buds a leaf, or springs the vilest weed,  
But little flocks upon its verdure feed;  
Nor fruit our palate courts, or flow'rs our smell,  
But on its fragrant bosom nations dwell,  
All form'd with proper faculties to share  
The daily bounties of their Maker's care.**

---

**From Phillis Wheatley, "On Imagination" (1773)**

Phillis Wheatley was a young black slave educated by a sympathetic mistress; she was the among the first writers in America to publish a volume of poems. The fact that someone in her situation was interested in space shows how widespread that interest had become by the time of the American Revolution.

**Imagination! who can sing thy force?  
Or who describe the swiftness of thy course?  
Soaring through air to find the bright abode,  
Th'empyrean palace of the thund'ring God,  
We on thy pinions can surpass the wind,  
And leave the rolling universe behind,  
From star to star the mental optics rove,  
Measure the skies, and range the realms above,  
There in one view we grasp the mighty whole,  
Or with new worlds amaze th'unbounded soul.**

---

**From Erasmus Darwin, *The Botanic Garden* (1791)**

Erasmus Darwin was Charles Darwin's grandfather, and is also known for his scientific achievement, as well as a prophetic passage of verse foreseeing powered flight. He based this account of the birth of the universe on the recent discoveries of Herschel.

**Through all his realms the kindling Ether runs,  
And the mass starts into a million suns;  
Earths round each sun with quick explosions burst,  
And second planets issue from the first;  
Bend, as they journey with projectile force,  
In bright ellipses their reluctant course;  
Orbs wheel in orbs, round centres centres roll,  
And form, self-balanced, one revolving Whole.**

---

**From Timothy Dwight, *Greenfield Hill* (1794)**

an ideal society and was dedicated to John Adams.

**See strong invention engines strange devise,  
And ope the mysteries of earth, seas, and skies;  
Aid curious art to finish works refin'd,  
And teach abstrusest science to mankind.  
Up the dread vault, where stars immensely roll,  
To heaven, Herschelian tubes conduct the soul;  
Where proud Orion heads th' immortal train,  
And opes his lucid window through the main;  
Where, far beyond this limitary sky,  
Superior worlds of liquid splendour lie;  
Far other suns diffuse th' unsetting ray,  
And other planets roll, in living day,  
Truth, bliss, and virtue, age by age, refine,  
And unknown nations bask in life divine.**

---

## Part II - 19th Century

### From Percy Bysshe Shelley, "Queen Mab" (1813)

In the tradition of poetically describing supernatural "cosmic journeys" in which other suns are observed, Shelley is writing of an imaginary tour conducted by a spirit.

**Earth's distant orb appeared  
The smallest light that twinkles in the heaven;**

**And countless spheres diffused  
An ever-varying glory.**

.....

**Below lay stretched the universe!  
There, far as the remotest line  
That bounds imagination's flight,  
Countless and unending orbs  
In mazy motion intermingled,  
Yet still fulfilled immutably  
Eternal Nature's law.  
Above, below, around,  
The circling systems formed  
A wilderness of harmony;  
Each with undeviating aim,  
In eloquent silence, through the depths of space  
Pursued its wondrous way.**

.....

**Throughout these infinite orbs of mingling light,  
Of which yon earth is one, is wide diffused  
A Spirit of activity and life,  
That knows no term, cessation, or decay.**

---

**From George Gordon, Lord Byron, "Cain" (1821)**

*Again, this is a supernatural "cosmic journey" in which Byron portrays  
Lucifer conducting Cain on a tour of the universe.*

***Cain:* Is yon our earth? . . Can it be?  
Yon small blue circle, swinging in far ether,  
With an inferior circlet near it still,  
Which looks like that which lit our earthly night?**



And as it waxes little, and then less,  
Gathers a halo round it, like the light  
Which shone the roundest of the stars, when I  
Beheld them from the skirts of Paradise.  
Methinks they both, as we recede from them,  
Appear to join the innumerable stars  
Which are around us; and, as we move on,  
Increase their myriads.

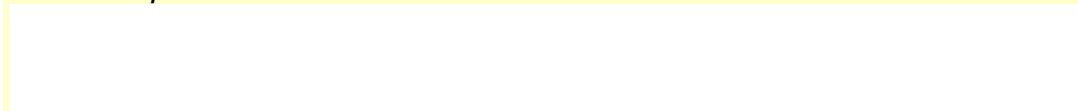
*Lucifer:* And if there should be  
Worlds greater than thine own, inhabited  
By greater things, and they themselves far more  
In number than the dust of thy dull earth,  
Though multiplied to animated atoms,  
All living, and all doomed to death, and wretched,  
What wouldst thou think?

*Cain:* I should be proud of thought  
Which knew such things.

*Lucifer:* But if that high thought were  
Link'd to a servile mass of matter, and,  
Knowing such things, aspiring to such things,  
And science still beyond them, were chained down  
To the most gross and petty paltry wants...

.....  
But now, behold!  
Is it not glorious?

*Cain:* Oh, thou beautiful



**And still increasing lights! What are ye? what  
Is this blue wilderness of interminable  
Air, where ye roll along, as I have seen  
The leaves along the limpid streams of Eden?  
Is your course measured for ye? Or do ye  
Sweep on in your unbounded revelry  
Through an aerial universe of endless  
Expansion--at which my soul aches to think--  
Intoxicated with eternity?  
Oh God! Oh Oh Gods! or whatso'er ye are!  
How beautiful ye are! how beautiful  
You works, or accidents, or whatso'er  
They may be! Let me die as atoms die  
(If that they die), or know ye in your might  
And knowledge! My thoughts are not in this hour  
Unworthy what I see, though my dust is;--  
Spirit! let me expire, or see them nearer.**

***Lucifer:* Art thou no nearer? look back to thine earth!**

***Cain:* Where is it? I see nothing save a mass  
Of most innumerable lights.**

***Lucifer:* Look there!**

***Cain:* I cannot see it.**

***Lucifer:* Yet it sparkles still.**

***Cain:* That!--yonder!**

***Cain:*** And wilt thou tell me so?  
Why, I have seen the fire-flies and the fire-worms  
Sprinkle the dusty groves and the green banks  
In the dim twilight, brighter than yon world  
Which bears them...

.....

But the lights fade from me fast,  
And some till now grew larger as we approached  
And wore the look of worlds.

***Lucifer:*** And such they are.

***Cain:*** And Edens in them?

***Lucifer:*** It may be.

***Cain:*** And men?

***Lucifer:*** Yea, or things higher.

***Cain:*** Ay, and serpents too?

***Lucifer:*** Wouldst have men without them? must no reptiles  
Breathe save the erect ones?

.....

From here on Cain compares what he was shown of the universe with Hades,  
which he is also shown.

***Cain:*** 'Tis a fearful light . . . unlike the worlds



**Of light gave way, and showed them taking shapes  
Unequal, of deep valleys and vast mountains;  
And some emitting sparks, and some displaying  
Enormous liquid plains, and some begirt  
With luminous belts, and floating moons which took  
Like them the features of fair earth...**

.....

**...The huge brilliant orbs which swung  
So thickly in the upper air, that I  
Had deemed them rather the bright populace  
Of some all unimaginable heaven  
Than things to be inhabited themselves,  
But that on drawing near them I beheld  
Their swelling into palpable immensity  
Of matter, which seemed made for life to dwell on,  
Rather than life itself.**

.....

**Within those glorious orbs which we beheld  
Distant, and dazzling, and innumerable,  
Ere we came down into this phantom realm.  
Ill cannot come: they are too beautiful.**

***Lucifer*:: Thou hast seen them from afar.**

***Cain*: And what of that?  
Distance can but diminish glory--they,  
When nearer, must be more ineffable.**

.....

**Thou hast shown me wonders . . . thou hast pointed out  
Myriads of starry worlds, of which our own**

.....

**[I have seen]**

**The overpowering mysteries of space--  
The innumerable worlds that were and are--  
A whirlwind of such overwhelming things,  
Suns, moons, and earths, upon their loud-voiced spheres  
Singing in thunder round me, as have made me  
Unfit for mortal converse.**

---

**From Alfred, Lord Tennyson, "Timbuctoo" (1829)**

Tennyson wrote this poem when he was in college, and won a prize for it.  
(It's the poem from which I took the title of my book *The Planet-Girded  
Suns*.) In imagination, he saw:

**The Moon's white cities, and the opal width  
Of her small glowing lakes, her silver heights  
Unvisited with dew of vagrant cloud,  
And the unsounded, undescended depth  
Of her black hollows. The clear galaxy  
Shorn of its hoary lustre, wonderful,  
Distinct and vivid with sharp points of light,  
Blaze within blaze, an unimagined depth  
And harmony of planet-girded suns  
And moon-encircled planets, wheel in wheel,  
Arch'd the wan sapphire. Nay--the hum of men,  
Or other things talking in unknown tongues  
And notes of busy life in distant worlds  
Beat like a far wave on my anxious ear.**

---

**From Hans Christian Oersted, "The Balloon," reprinted in *The***

**In laws which guide the course along heaven's paths?  
Look with a larger view around; behold  
The unity of living thoughts, displayed  
In countless varying forms. The mighty sun  
Is but a twinkling star amidst the space  
Infinite filled with worlds, whose suns, heaven's lamps,  
Shine in our night . . . Look  
Upon the spangled heav'ns, there to discover  
Thousands of blazing suns, encircled by  
Companions numerous . . . A race of beings behold  
Struggling for mental power, knowledge divine.**

---

**From Walt Whitman, "Walt Whitman" (1855)**

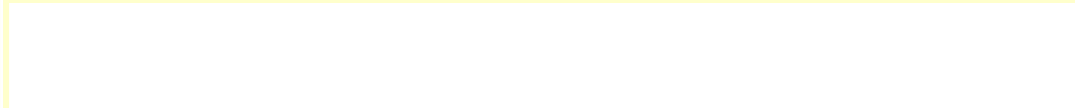
**I do not know what is untried and afterward;  
But I know it will in its turn prove sufficient, and cannot fail.  
Each who passes is consider'd--each who stops is consider'd--  
not a single one can it fail  
Nor anything in the myriads of spheres--nor one of the myriads  
of myriads that inhabit them...**

**. . . . .**

**I open my scuttle at night and see the far-sprinked systems,  
And all I see, multiplied as high as I can cipher, edge but the  
rim  
of the farther systems.**

**Wider and wider they spread, expanding, always expanding,  
Outward and outward, and forever outward.**

**My sun has his sun, and round him obediently wheels,  
He joins with his partners, a group of superior circuit,  
And greater sets follow, making specks of the greatest inside  
them.**



were at this moment reduced back to a pallid float, it would  
not  
avail in the long run;  
We should surely bring up again where we now stand,  
And as surely go as much farther--and then farther and farther.  
A few quadrillions of eras, a few octillions of cubic leagues, do  
not  
hazard the span, or make it impatient;  
They are but parts--anything is but a part.  
See ever so far, there is limitless space outside of that;  
Count ever so much, there is limitless time around that.

.....

This day before dawn I ascended a hill, and look'd at the  
crowded  
heaven,  
And I said to my Spirit, *When we become the enfolders of those  
orbs, and the pleasure and knowledge of everything in them,  
shall we be fill'd and satisfied then?*  
And my Spirit said, *No, we but level that lift, to pass and  
continue  
beyond.*

.....

And I say to any man or woman, Let your soul stand cool and  
composed before a million universes.

---

From Walt Whitman, "On the Beach At Night Alone" (1856)  
As I watch the bright stars shining, I think a thought of the clef  
of the universes and of the future.  
A vast similitude interlocks all,  
All spheres, grown, ungrown, small, large, suns, moons, planets,

**All souls, all living bodies though they be ever so different, or in  
different worlds,  
All gaseous, watery, vegetable, mineral processes, the fishes,  
the brutes,  
All nations, colors, barbarisms, civilizations, languages,  
All identities that have existed or may exist on this globe, or  
any globe,  
All lives and deaths, all of the past, present, future,  
This vast similitude spans them, and always has spann'd,  
And shall forever span them and compactly hold and enclose  
them.**

---

**From Walt Whitman, "Night on the Prairies" (1860)  
I was thinking this globe enough, till there sprang out so  
noiseless  
    around me myriads of other globes.  
Now, while the great thoughts of space and eternity fill me, I  
will  
    measure myself by them;  
And now, touch'd with the lives of other globes, arrived as far  
    along as those of the earth,  
Or waiting to arrive, or pass'd on farther than those of the  
earth,  
I henceforth no more ignore them, than I ignore my own life,  
Or the lives of the earth arrived as far as mine, or waiting to  
arrive.**

---

**Henry Abbey, "Faith's Vista" (1879)**

**This poem may have been printed in a magazine before Abbey's collected  
poems were published in 1879--but if not, it appeared just a few years before**

**When from the vaulted wonder of the sky  
The curtain of the light is drawn aside,  
And I behold the stars in all their wide  
Significance and glorious mystery,  
Assured that those more distant orbs are suns  
Round which innumerable worlds revolve,  
My faith grows strong, my day-born doubts dissolve,  
And death, that dread annulment which life shuns,  
Or fain would shun, becomes to life the way,  
The thoroughfare to greater worlds on high,  
The bridge from star to star. Seek how we may,  
There is no other road across the sky;  
And, looking up, I hear star-voices say:  
"You could not reach us if you did not die."**

---

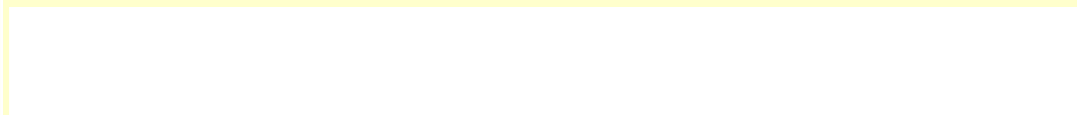
#### **From more works of Tennyson**

**Though Tennyson mentioned other planets in several of his well-known poems, references to them also appear in a number of his less famous ones. The pessimism of some reflects not only the decline of human belief in the ideal perfection of worlds other than ours, but the dawn of awareness that if they are inhabited, it is by beings with problems similar to our own.**

#### **From "Ode on the Death of the Duke of Wellington" (1852)**

**Tho' world on world in myriad myriads roll  
Round us, each with different powers,  
And other forms of life than ours,  
What know we greater than the soul?**

#### **From "Despair" (1881)**



Flashing with fires as of God, but we knew that their light was  
a lie--  
Bright as with deathless hone--but, however they sparkled and  
shone,  
The dark little worlds running round them were worlds of woe  
like our own.

From "Vastness" (1885)

Many a hearth upon our dark globe sighs after many a  
vanish'd face,  
Many a planet by many a sun may roll with the dust of a  
vanish'd race.  
Raving politics, never at rest--as this poor earth's pale  
history runs,  
What is it all but a trouble of ants in the gleam of a million  
million of Suns?

From "Epilogue" to "The Charge of the Heavy Brigade" (1885)

The fires that arch this dusky dot--  
Yon myriad-worlded way--  
The vast sun-clusters' gather'd blaze,  
World-isles in lonely skies,  
Whole heavens within themselves, amaze  
Our brief humanities.

---

From Alfred, Lord Tennyson, "Locksley Hall Sixty Years After"  
(1886)

here and elsewhere, and is as relevant today as when it was first published.

**Earth at last a warless world, a single race, a single tongue--  
I have seen her far away--for is not Earth as yet so young?  
Every tiger madness muzzled, every serpent passion kill'd,  
Every grim ravine a garden, every blazing desert till'd,  
Robed in universal harvest up to either pole she smiles,  
Universal ocean softly washing all her warless isles.**

**Warless? when her tens are thousands, and her thousands  
millions, then--**

**All her harvest all too narrow--who can fancy warless men?  
Warless? War will die out late then. Will it ever? late or soon?  
Can it, till this outworn earth be dead as yon dead world the  
moon?**

.....

**Dead, but how her living glory lights the hall, the dune, the  
grass!**

**Yet the moonlight is the sunlight, and the sun himself will pass.  
Venus near her! smiling downward at this earthlier earth of  
ours,**

**Closer on the sun, perhaps a world of never-fading flowers.  
Hesper, whom the poet call'd the Bringer home of all good  
things--**

**All good things may move in Hesper, perfect peoples, perfect  
kings.**

**Hesper--Venus--were we native to that splendor or in Mars,  
We should see the globe we groan in, fairest of their evening  
stars.**

**Could we dream of wars and carnage, craft and madness, lust  
and spite,**

**Roaring London, raving Paris, in that point of peaceful light?**

were there"?

Forward, backward, hackward, forward, in the immeasurable  
sea,  
Sway'd by vaster ebbs and flows than can be known to you or  
me.

All the suns--are these but symbols of innumerable man,  
Man or Mind that sees a shadow of the planner or the plan?  
Is there evil but on earth? or pain in every peopled sphere?  
Well, be grateful for the sounding watchword "Evolution" here,  
Evolution ever climbing after some ideal good,  
And Reversion ever dragging evolution in the mud.

What are men that He should heed us? cried the king of sacred  
song;

Insects of an hour, that hourly work their brother insect wrong,  
While the silent heavens roll, and suns along their fiery way,  
All their planets whirling round them, flash a million miles a  
day.

Many an aeon moulded earth before her highest, man, was born,  
Many an aeon too may pass when earth is manless and forlorn,  
Earth so huge, and yet so bounded--pools of salt, and plots of  
land--

Shallow skin of green and azure--chains of mountain, grains of  
sand

Only That which made us meant us to be mightier by and by,  
Set the sphere of all the boundless heavens within the human  
eye,

Sent the shadow of Himself, the boundless, thro' the human  
soul;

Boundless inward, in the atom, boundless outward, in the  
Whole.

**Something other than the wildest modern guess of you and me.**

---

**From Helen Hunt Jackson, "Emigravit" (1886)**

This expresses an idea different from the 18th-century belief that souls would voyage through space after death merely to observe; it suggests a future life on another world, as distinguished from the traditional concept of Heaven. Although this idea is rarely talked about, there are people today who hope that they will be reincarnated on some planet elsewhere in the universe.

**Who knows what myriad colonies there are  
Of fairest fields, and rich, undreamed-of gains  
Thick planted in the distant shining plains  
Which we call sky because they lie so far?  
Oh, write of me, not "Died in bitter pains,"  
But "Emigrated to another star!"**

---

**From Rudyard Kipling, "To the True Romance" (1893)**

**Beyond the bounds our staring rounds,  
Across the pressing dark,  
The children wise of outer skies  
Look hitherward and mark  
A light that shifts, a glare that drifts,  
Rekindling thus and thus,  
Not all forlorn, for thou hast borne  
Strange tales to them of us.**

---

**From George Meredith, "Meditation Under Stars" (1888)**

I placed this last because though published a few years before Kipling's, it is the most "modern" of the 19th-century poems about other worlds, and reveals best the sense of kinship humankind now feels, more than a century later, with life throughout the universe.

**The solitary asks, and they  
Give radiance as from a shield:  
Still at the death of day,  
The seen, the unrevealed.  
Implacable they shine  
To us who would of Life obtain  
An answer for the life we strain,  
To nourish with one sign.  
Nor can imagination throw  
The penetrative shaft: we pass  
The breath of thought, who would divine  
If haply they may grow  
As Earth; have our desire to know;  
If life comes there to grain from grass,  
And flowers like ours of toil and pain;  
Has passion to beat bar,  
Win space from cleaving brain;  
The mystic link attain,  
Whereby star holds on star.  
.....  
The spirit leaps alight,  
Doubts not in them is he,  
The binder of his sheaves, the same, the right:  
Of magnitude to magnitude is wrought,  
To feel it large of the great life they hold:  
In them to come, or vaster intervolved,  
The issues known in us, our unsolved solved:  
That there with toil Life climbs the self-same Tree,  
Whose roots enrichment have from ripeness dropped.  
So may we read and little find them cold:**

**Nor dreaming on a dream; but fortified  
By day to penetrate black midnight; see,  
Hear, feel, outside the senses; even that we,  
The specks of dust upon a mound of mould,  
We who reflect those rays, though low our place,  
To them are lastingly allied.**

**So may we read, and little find them cold:  
Not frosty lamps illumining dead space,  
Not distant aliens, not senseless Powers.  
The fire is in them whereof we are born;  
The music of their motion may be ours.  
Spirit shall deem them beckoning Earth and voiced  
Sisterly to her, in her beams rejoiced.**

---





# What is a Sonnet?

Shakespearean **sonnets** are poems of 14 lines with an ABAB CDCD EFEF GG **rhyme scheme**. Each line is written in **iambic pentameter**. The **rhythm** resembles a heartbeat—if you tap on your desk as a sonnet is read, you can hear the iambic pentameter. A Shakespearean sonnet consists of four separate **stanzas**: three **quatrains** and a **couplet** at the end.

---

*Define the terms below.*

rhyme scheme

---

---

---

iambic pentameter

---

---

---

rhythm

---

---

---

stanza

---

---

---

quatrain

---

---

---

couplet

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---

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