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About the Author

Sandra Kynes is a yoga instructor, Reiki practitioner, and a membe of the Bards, Ovates and Druids. She likes developing creative way to explore the world and integrating them with her spiritual pat which serves as the basis for her books. She has lived in New Yor City, Europe, England, and now coastal New England. She love connecting with nature through gardening, hiking, and ocea kayaking. Visit her website at www.kynes.net.

Sandra Kynes

STAR MAGIC

The Wisdom of the Constellations for Pagans & Wiccans

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This book is dedicated to stargazer Lyle Koehnlein,
my son and special star.

Contents

Introduction

Have you ever wished upon a star, reached for the tars, or thanked your lucky stars? Those twinklin lights in the dark heavens have mystified and bedazzled people since time immemorial, and they sti fascinate us today. Although the stars may seem remote, their familiar patterns have provided comfo and guidance when the world was lit only by firelight. Many ancient people observed the night sky ar documented the constellations in one form or another; some through myth and others using comple mathematics. People of the past used the stars to reckon time, navigate the seas, and coordinate th planting and harvesting of crops. Even today, in our well-lit techno world, the stars remain a source o wonder, drawing enormous attention whenever a spacecraft sends images home to Earth.

I have fond childhood memories of summer nights lying in the grass, looking at the sky, and tryin to fathom the distances. My father was a Boy Scout Scoutmaster and loved spending time outsi teaching young people about the wonders of nature. Of course, that included my sister and me. O nights of meteor showers, he would point out the areas of the sky to watch. I would secretly cross m fingers and hope to see a shooting star upon which to wish. The enthusiasm that I inherited from m father was passed on to my son. During his childhood, he and I spent many Saturdays uptown at th American Museum of Natural History in New York City. The dinosaur room always topped ou agenda, but the day wouldn't be complete without visiting the Hayden Planetarium where we bo marveled at the spectacle even though it was only a show. My son's interest continues to this day, an as a professional photographer he takes every opportunity to capture the stars.

The most well-known and impressive testament to ancient peoples' observations of the sky Stonehenge on the Salisbury Plain in England. Not only does it speak of the importance in markin celestial events, but also the cumulative knowledge necessary to embark on such a project. Howeve while the ancients were quite familiar with the patterns in the night sky, we, sadly, are not. We ar drawn by the glamour of the moon as we celebrate its shining fullness with our esbats. And althoug we may follow the turning wheel of the zodiac, how many of us can identify these constellations whe we look up at the night sky?

Beyond recognizing the Big or Little Dippers and maybe Orion's Belt, what star patterns do most o us know? Perhaps part of the problem is that few of us experience the true darkness of night as ou ancestors did. Their world wasn't as bright as ours with its artificial light 24-7. Light itself is a for of pollution that takes away the dark cover of night and diminishes or obscures the twinkling grande above. As a result, the most inspiring sight to behold in the night sky is the moon. While Earth satellite is enchanting, we unfortunately miss almost everything else, or when we do see the stars w may not know what we are looking at. Because of this, we are missing out on some very powerf magic.

The idea of using constellations for magic and ritual isn't new. Medieval texts included details abo stars and how to determine the optimal time to draw their influence into talismans as well as oth

uses. A small remnant of this remains in our use of birthstone jewelry. If we believe that th
constellations of the zodiac hold a great deal of power and influence, then why not the others? Whi
each of the zodiac signs have their time on the solar stage of day, have you wondered what goes o
opposite them in the night sky? When Pisces and Aries are casting their birth influences as backdro
to the sun, Libra and Virgo are bringing balance and welcoming spring during the night. In additio
just as a cloudy night does not block the energy of a full moon, so too does the power of stars reach
even if we cannot see them.

The stars have always had a profound influence on us. Many of the goddesses we acknowledg
worship, and honor today have been known as star goddesses. Known by many names in numero
cultures, Astarte was ultimately known as the Queen of Heaven. Ishtar's symbol was the eight-pointe
star, and Inanna was known as the Queen of Heaven and Earth. Legends of the Egyptian goddess Nu
who is depicted as the span of heaven arching over her earth husband Geb, predate sacred texts. Isi
first-born daughter of Nut and Geb, became the mistress of the cosmos when her parents "retired
heaven." [1] The Romans depicted Vesta as a star goddess whose pure flame was a beacon in th
darkness of the night sky.

According to Sumerian texts, the stars were home to the gods of creation. The Egyptians equate
terrestrial geography with celestial fields and cities. To the people of India, earthly cities had heaven
counterparts, too. All royal cities in India were based on a mythical celestial city. In many culture
temples were regarded as sacred mountains and the meeting point of heaven and earth. Mesopotamia
ziggurat temples represented cosmic mountains upon which the heavenly gods could descend to Eart

Although there have been many permutations over the years, the widely used *Charge of the Godde*
refers to the Star Goddess. The original version has been attributed to Charles Leland, Gerald Gardne
and Doreen Valiente, and it contains: "Hear ye the words of the Star Goddess, she in the dust of who
feet are the hosts of heaven, and whose body encircles the universe." [2]

Another reason that Wiccans and Pagans may want to take more of an interest in the constellatio
is the simple fact that our basic and most-recognizable symbol, the pentagram, is a star. We follow a
earth-centered spirituality, yet we look to the heavens. Being outside under a limitless canopy of sta
invites us to open our souls and connect with something far, far greater than ourselves. Just as we ca
draw down the energy of the moon, so too can we tap into the celestial energy beyond.

I am very much the amateur astronomer. I have not had formal training, but I love jumping in an
learning as much as I can about the things that interest me. In addition to my father's enthusiasm
growing up at the beginning of the space age sparked the stargazer in me. While I never wanted to g
into space, I wanted to know what was beyond this planet. There's something comforting abo
looking at the night sky and having a pretty good idea of what is where no matter where I am. It's lik
being in a familiar neighborhood. In my teen years, as I found my way onto a Pagan path, m
perspective on the natural world evolved into a reverence that was highlighted by awe. To me, th
term "natural world" wasn't limited to the earth; it always included the dome of the sky. Celebratin
the esbats is about more than just the moon for me; it is also about that mysterious, endlessne
beyond. Despite the enormity of the universe, I have a sense of place because I can find the markers
the seasons. This sense of place also provides a connection with my ancestors because they wou

have seen what I see. This stellar continuity is a spiral that connects us. The stars also connect us wi
the magic of the universe. Truly as above, so below. Over the years I accumulated quite a few notes c
my thoughts, ideas, and experiences, which I have decided to share.

This book explores the night sky, examines the mythology of the constellations, and presents a ne
interpretation that is relevant for twenty-first-century Pagans and Wiccans. The stars connect us wi
the past, and Chapter One begins with a historical view on how people of ancient times regarded th
constellations. In addition, we will see how modern astrology is based on the zodiac as it was observe
several thousand years ago and we will learn how these constellations are different today. Aft
introducing celestial coordinates, Chapter Two will get you started reading star maps. It also includ
information on planispheres and a few online resources and smartphone apps. We will also learn abou
official star designations and how "a" star is sometimes more than one.

This book is also about magic and magic is about moving and using energy. If you are familiar wi
drawing down the moon for ritual or magic, you are well on your way to working with the star
Chapter Three provides an introduction to general energy work and methods for drawing on and usin
energy from the stars to enhance rituals and boost magic.

Because the Wheel of the Year turns the earth and heavens, this book is designed to allow you t
start with the chapter that coincides with the current season. One thing to keep in mind, however,
that the visible constellations do not suddenly change. In early spring, we will still see some of th
late winter constellations and some of the late spring constellations will not be visible. Like th
changing seasons on Earth, it is a gradual process. Chapter Four through Chapter Seven cover th
seasonal constellations visible from the Northern Hemisphere.

While Chapter Eight is entitled *The Southern Hemisphere*, readers in the Northern Hemisphe
should not immediately assume it is not for them. In fact, a number of constellations included
Chapter Four through Chapter Seven are actually southern. The additional southern constellation
presented in Chapter Eight are also visible in many parts of the north. Because what we are able to s
is based on where we are located on Earth, I have included the latitudes between which th
constellations can be seen. For reference, Appendix A provides latitude information for a number
cities around the world.

These chapters include star maps to help familiarize you with the night sky according to season.
am not a cartographer, so these maps are approximations that just show the basic position of th
constellations and how they relate to each other. Each individual entry includes a depiction of some
the stars in that constellation and where they fit within the imagined figure. Rather than reproduc
entire star patterns, these individual maps are intended to suggest the constellations. Keeping the
simple makes it easier to re-create a star pattern for ritual and magic work. The many star charts th
you may find in other books and online often provide different renderings of constellations, and yo
may be inspired to create your own. For this reason, I have included the official designation of eac
star in the drawings to aid you in orienting it to a more complete map of its constellation. Th
drawings also serve as a map for coordinating each star's color, should you choose to combine colo
magic with your star work.

Information on each constellation includes its history, associated myths, and the particulars o

notable stars. Each entry includes the constellation's official name and its common English nam
Also included is information on the pronunciation of constellation and star names and th
constellation abbreviations that you will find on star maps. Of course, each constellation ent
includes an interpretation for Pagan and Wiccan magic and ritual. These sections provide ideas an
details on how to apply the energy of a constellation to your life. My hope is that this will spark yo
creativity and you will find ways to make star magic uniquely yours.

As mentioned, this book works with the constellations and actual seasons rather than the tim
frames used in modern astrology. Despite this difference, star magic and astrology are n
incompatible. While star magic is based on the current position and movement of constellation
astrology uses a historical system that holds a great deal of meaning. Although I am not an astrologe
I believe that practitioners can draw energy from the constellations that appear in the night sky
enhance and support their work.

For astrologers, I have included information on the planets associated with particular constellatio
and individual stars. For nonastrologers, Appendix C provides a table of planet energies and qualitie
In addition, Appendix C contains details about the "fixed stars" that were considered powerful guid
during the Middle Ages and Renaissance.

This book can be used in a number of ways. It can bring awareness of the night sky beyond th
powers of the moon to enhance your esbat rituals. It can serve as an introduction to stargazing with
magical twist, and it may even propel you further into studying astronomy. More simply, it will brin
you that neighborhood feeling when you step outside at night and see familiar star patterns. Most
all, you will learn which stars are overhead throughout the seasons and how to use their energy in yo
life.

No matter how you want to engage in star magic, spending a little time outside at night provides
different and refreshing perspective. Night softens the world—bringing rest as well as incubation f
magic and creativity. Stargazing requires us to stop and look. This simple act allows us to reach insid
our souls and experience the wonder that echoes down through the eons from people in the far dista
past. The energy of the stars envelops our planet and holds us in the web of the cosmos. In the schem
of the universe we are so tiny, yet we are a part of something so vast and wondrous.

Like gazing at clouds, we may each perceive something different in the constellations. This book
my interpretation, but I encourage you to follow your feelings and intuition. Trust what you see in th
stars, and let them guide you to a new level of magic and wonder.

[contents]

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1. *Leeming, Goddess, 78.*
2. *Moura, Grimoire for the Green Witch, 119.*

Chapter One

Astronomy and Astrology

Historical Background

Unlike people of ancient times, we tend to stay in our own backyard of the solar system. This strik me as odd for a civilization with space telescopes that allow us to see farther than our ancestors ev dreamed. In this book, we will explore the constellations, learn how to look for them, and discov new ways to bring star magic into our lives.

Modern astronomy recognizes eighty-eight constellations, some of which are based on the fort eight ancient Greek star figures described by the mathematician Claudius Ptolemaeus (circa 100–17 CE), better known simply as Ptolemy. The other forty modern constellations are based on Europea star atlases from the fifteenth through seventeenth centuries. Although the Latin names of mar constellations were derived from their earlier Greek designations, not all of them originated wi Greek astronomers. While Ptolemy cataloged more than 1,000 stars, he associated them wi constellations that had been known for centuries, many of which originated with Sumerian ar Babylonian astronomers.

Ptolemy's knowledge of astronomy is believed to have come indirectly from the Egyptian Chaldeans, and Phoenicians. His information was more directly derived from the work of Gre mathematician Eudoxus of Cnidus (circa 390–340 BCE) to whom scholars have attributed the earlie text on the constellations. Eudoxus traveled widely to study a number of disciplines, includi medicine and law. While his work itself does not survive, his star figures were known through th writings of Greek poet Aratus (circa 315–245 BCE). Aratus's literary work entitled *Phaenomena* w often used as an introduction to astronomy and is the oldest description of the constellations that h come down through the centuries intact.

Other early stargazers and chroniclers were the Greek mathematician Eratosthenes (circa 276–19 BCE), who described forty-two constellations, and the astronomer Hipparchus (circa 170–127 BCE who noted forty-eight groups of stars. It was Hipparchus who discovered the ongoing shifting of th stars that we know today as "precession," or "precession of the equinoxes." Regardless of source, th Greeks wrapped the star figures in their own mythology and created an ongoing drama in the nig skies. Arab, Persian, Roman, and later medieval European astronomers also adopted this interpretatio of the constellations.

While Greek influence on astronomy was widespread, the Greeks were not the earliest stargaze The Babylonians, Persians, Egyptians, Indians, and Chinese also studied the heavens. As early as 230 BCE the Chinese were coordinating their twelve zodiac signs with twenty-eight lunar mansions.[3] Th Hindus of India had a similar system by which they tracked the moon's progress across the stars, ar they associated a particular star with each lunar mansion. The Assyrians regarded the stars a divinities with either benevolent or malevolent powers.

In later times, as Europeans made contact with tribal people around the world, it was discovered th
they also observed the stars and made it part of their lore. The Bushmen of Africa considered the sta
to have been people or animals that once walked the earth. In New Zealand, the stars were regarded
legendary heroes whose brightness depended on their greatness in terrestrial battle before passing
to the heavens. As well as being regarded as the children of the sun and moon by the early people
Peru, the stars were believed to function as guardian deities. And last but not least, many Nativ
American tribes looked on the constellations as celestial counterparts to powerful terrestrial animals.

Most early cultures observed the seasonal differences in the night sky as the star patterns change
over the course of a year. Providing a longer count than the moon, reckoning by the stars enable
people to mark time for planting, harvesting, and ritual. Visible year round, the circumpolar stars ar
especially the North Star—that reliable beacon that never moved—provided markers for navigatio
through the night seas. Building on what had gone before, the Greeks also used the constellations f
navigation and agriculture. This is evident in the works of the writer Homer (eighth century BCE) wh
described Odysseus, the hero of his stories, navigating by the stars. Additionally, the poet and farme
Hesiod (circa 700 BCE) advised others on how to use the stars for determining the right time to pla
their fields. The aesthetic beauty of the constellations also served as a decorative motif for the Greek
who painted them on domed ceilings, and the Romans, who worked them into tapestries with threa
of gold and silver.

Based on a set of tablets dating to approximately 1800 BCE, scholars believe that the Babylonia
knew how to use calculations to fill in for the times when observations could not be made due
weather conditions or other circumstances. These tablets span one thousand years and are thought
be a type of calendar that includes listings of stars along with observation dates and times.[4] Using th
information and incorporating the divination results of their stargazing into their daily lives develope
into a system that is considered to have been far more complex than our present-day astrology. Usin
the stars for in-depth horoscopes to guide daily life was not the only important aspect for some peop
in ancient Mesopotamia. During the first and second centuries, Sabianism, or star worship, sprang u
in the city of Harran. This early Sabianism has been described as involving astrology, star worshi
and magic. Although Sabianism was part of the pre-Islamic religion of the Harranians, the ter
Sabian was later applied to any form of star worship.

The Egyptian's system of celestial observation dates to the Old Kingdom (circa 2650–2150 BCE
however, it was not as complex as the one used by their northern neighbors in Babylon. Even so, the
star calendar contained thirty-six groups of stars. Within eight centuries from the initiation of the
sky studies, the Egyptians were building temples and monuments that aligned with certain stars.
addition, they divided the night sky in half with Meskhet, the Big Dipper, as the northern marker an
Sopdet, the star Sirius, as the southern marker. The constellation Orion was known as the Guardian
the Soul of Horus.

While the classical civilizations left records of their stargazing, little was known about any suc
endeavors by northern Europeans, where there were no great cities and no early forms of writin
Germany was generally considered the dark heart of Europe, primitive and uncivilized. However, th
discovery of the Nebra sky disc in 2001 has changed that presumption. Found in central Germany, th

bronze disc has a diameter of twelve and a half inches and it is embossed with gold leaf depictions the crescent and full moons, the sun, and stars. It has been dated to 1600 BCE. After considerab study, scholars believe that Bronze Age Europeans were far more sophisticated than previous thought. According to astronomer Wolfhard Schlosser of the Ruhr University at Bochum, Germany Bronze Age sky gazers knew as much as the Babylonians. In addition, their astronomical knowledg and abilities allowed them to use a combination of solar and lunar calendars.

With some surprise, scientists realized that the small group of seven stars on the Nebra sky dis actually depicts the Pleiades, a cluster of stars in the constellation Taurus. Realistic star images d not appear until 1400 BCE in Egypt, making the Nebra sky disc the oldest accurate picture of the nig sky. In addition, the mysterious golden horizon bands that were originally thought to represent som sort of solar boat turn out to be markers for the solstices. Actually, this is not so startling because a across northern Europe many standing stones erected in prehistoric times were aligned to mark th solstices. According to Professor Miranda Green of the University of Wales, the Nebra sky dis presents a mosaic of symbols that were part of a complex European-wide belief system. I found wonderful to learn that the early Pagans of Europe who erected stone circles and alignments celebrate the solstices were also gazing beyond to the stars.

After the decline of the Roman Empire, Europe entered the chaotic period known as the Dark Age (approximately 476–800 CE), when the advancement of learning and knowledge came to a virtual hal Luckily the observations and ideas of many ancient stargazers were translated and kept alive b scholars in the Middle East. A great deal of this work was re-translated from Arabic to Latin durin the twelfth and thirteenth centuries as it was carried back into Europe. However, during the Dar Ages, Ireland was a little bright spot in Europe that quietly maintained a high level of culture an learning.

Writing about early Irish astrology, distinguished Celtic scholar, historian, and author Pete Berresford Ellis noted that the Irish, and Celts in general, had a long tradition of astrological study. A the first-century-BCE Coligny Calendar demonstrates, Celtic cosmology was highly sophisticated. addition, the ancient Brehon Laws of Ireland required that astronomers/astrologers prove their level qualification in order to practice their art. Prior to Arabic texts on astronomy and astrology bein translated into Irish in the twelfth century, the earliest writings in Ireland reveal a native concept whe naming the constellations and planets. For example, the constellation Leo was called *An Corran*, "th reaping hook," which describes the sickle shape of stars that define Leo's head.[5] Ellis also noted th the astronomical information on stars, comets, and other celestial bodies recorded in the variou annals and chronicles of Ireland were more accurate than many others produced in Europe at that tim

With all the knowledge that had been accumulated in the ancient world, it was Ptolemy's work tha stood the test of time until the fifteenth century when scientific study took off. Polish mathematicia and astronomer Nicolaus Copernicus (1473–1543) put forth his theory that the sun was the center the universe and not Earth. Although his idea was controversial at the time, it marked the beginning a change in the way people viewed Earth and its place among the stars. Danish nobleman an astronomy enthusiast Tycho Brahe (1546–1601) built an observatory and, without a telescop accurately mapped almost eight hundred stars. In 1603, German astronomer Johann Bayer (157

1625) published a star atlas that was the first to map the entire sky. Bayer also established the namin convention for stars within a constellation that is still used today. Another important astronomer o the time was Johannes Kepler (1571–1630), who put forth the laws of planetary motion.

While modern scientific study of the stars was getting started during this period, there was n distinction between astronomy and astrology as there is today. In fact, the great founders of moder astronomy were also astrologers. It is somewhat ironic that during the scientific revolution astrolog remained an integral part of astronomy, mathematics, and medicine. In general practice, medieva astrology was divided between the two applications of divination and medicine. The famed Englis herbalist Nicholas Culpeper (1616–1654) also wrote several books on astrology and integrated h astrological knowledge with his herbal practice. From a medical standpoint, various parts of the bod were believed to be under the influence of the constellations of the zodiac. Because of this, a physicia did not diagnose a problem until he performed a series of complex astrological computations. The en result would determine whether or not particular cosmic influences would be advantageous for th patient. Eventually the scientific thinking that developed after the seventeenth century demande observable physical explanations. While this moved astrology outside the realm of science, i influence and popularity has not waned.

As mentioned, the work of ancient stargazers was kept alive in the Middle East, and many of th traditional names of stars that we know today are a mix of Arabic, Greek, and Latin as well a mistranslations from one language to another. The star Rigel in the Orion constellation is one suc case. Instead of the hunter Orion, Arab astronomers saw this constellation as a female figure the called al-Jauza and named the bright star that marked her left foot Rijl al-Jauza, “the foot of al-Jauza Over the centuries and through several translations, Rijl evolved into Rigel. The spelling varied a well, which is why we find the same word spelled *rigil* as in the star name Rigil Kentaurus, “the fo of the centaur.” Also, many of the star names beginning with “al” stem from the Arabic “al,” which i the equivalent of the word “the” in English.

As we study the stars, we find that there are no older constellations in the far Southern Hemispher This is because that area of the sky was unknown to observers in the civilizations that discerned an named these star patterns. The classical constellations are centered on the north celestial pole as it wa over 2,000 years ago. The north celestial pole is above Earth’s terrestrial North Pole, and, likewise, th south celestial pole is above the South Pole. Earth’s axis is tilted; it is not straight up and down. As result, the terrestrial and celestial poles are at corresponding angles that shift over time due to Earth rotation and wobble. As our planet spins, it also wobbles like a top. The name for this wobble “precession,” and it is caused by the gravitational pull of the moon and sun, which shifts Earth orientation in space.

If an imaginary line from the axis were extended outward into space, it would align with differe stars over time. Because of precession, Polaris is now the nearest star to the North Pole and it mark the north celestial pole. Also known as the North Star and the Pole Star, Polaris is calculated to mov closer to and within one degree of the North Pole around the year 2100. Also due to precessio approximately 4,500 years ago the star Thuban in Draco the Dragon constellation had that hono While the Southern Hemisphere does not have a pole star, the nearest star to the south celestial pole

Beta Hydri in Hydrus the Southern Water Snake.

Precession is also known as “precession of the equinoxes” because Earth’s shift in space affec which constellation marks the spring equinox. This slow shift makes the sun appear to be laggi behind in its progression through the zodiac and over time the constellation that marks the spri equinox lags behind. The change in constellation at the spring equinox gave rise to the concept “ages” or “astrological ages,” so when there is a constellation change at the spring equinox it is t beginning of that age. The Age of Aquarius is an example that most people have heard about. The fu cycle of precession takes almost 26,000 years. Today the spring equinox occurs when Pisces marks t equinox, however; 2,500 years ago it was Aries. Earlier still, Taurus would have been the constellati at the equinox, which is thought to be one of the reasons that bulls have been associated with spri fertility rites.

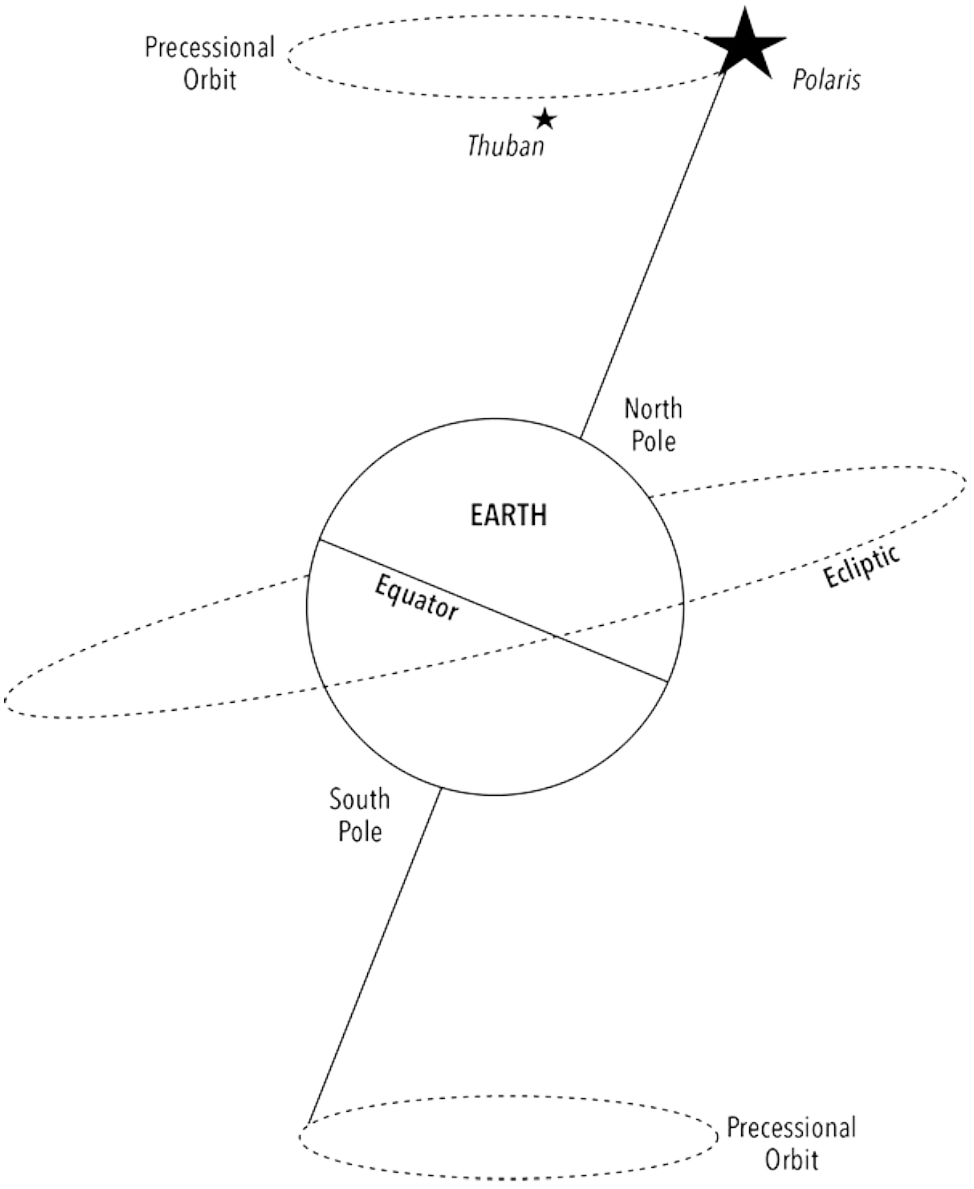

Figure 1.1. Earth’s wobble causes the shift in pole stars.

In 1922, the International Astronomical Union (IAU) established the modern eighty-eig constellations and introduced the convention whereby defined regions were created to cover the enti sky without overlaps or gaps. To accomplish this, newer constellations were added to fill in the spac between some of the classical ones. Because of this reorganization, some constellations such as Arg

Navis became extinct. However, this is not to say that the stars went the way of the dinosaurs; instea
certain star groups were no longer recognized as official constellations.

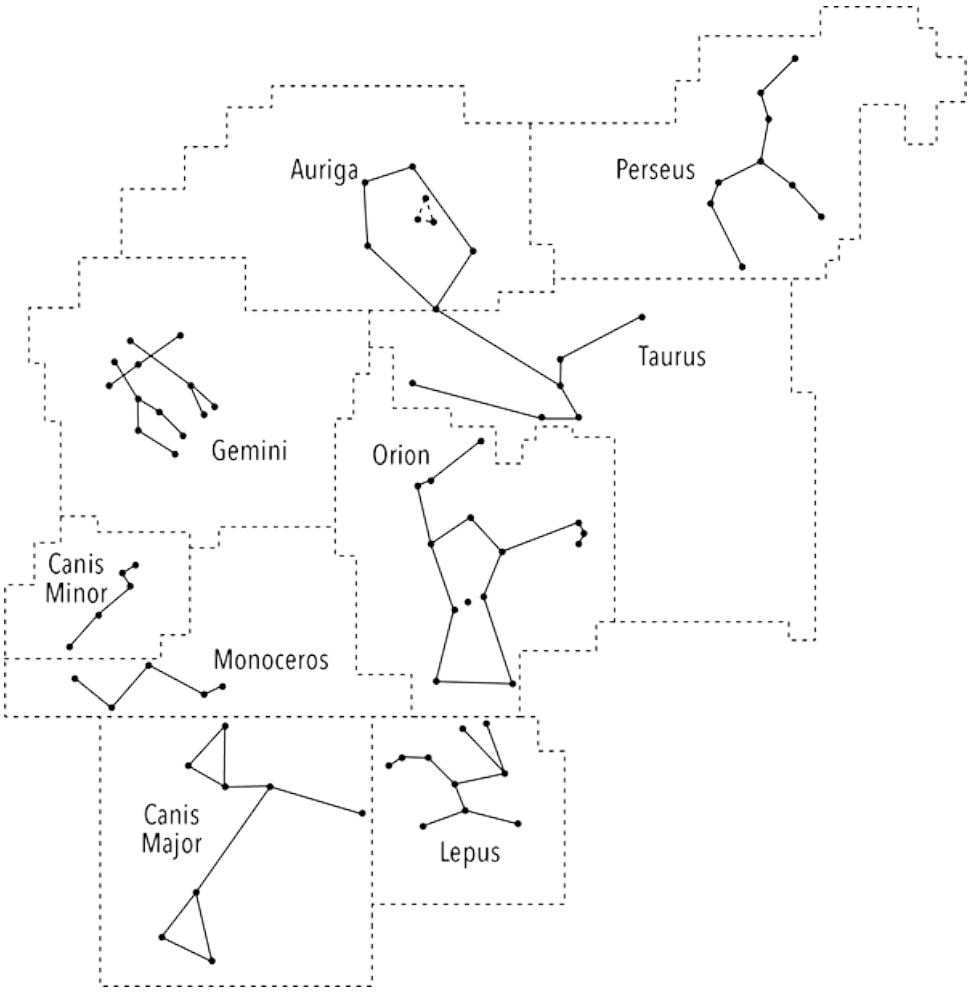

Figure 1.2. Part of the winter night sky is shown above to illustrate how defined regions cover the entire sky without overlaps or gaps.

The word *constellation* means “a gathering of stars”; however, in today’s terms a constellation is a acknowledged pattern of stars within a defined region of the sky. Although the stars within constellation form a pattern, they often have no relation to each other and, in fact, are at differe distances from Earth. These stars may appear to be of equal distance because of their varyi brightness. In other words, a very bright star that is farther away from Earth may seem to be the san distance as a closer one that is less brilliant.

While an asterism is also a discernible pattern of stars, it is not officially recognized as constellation. However, asterisms are often helpful for finding other stars and constellations. The B Dipper is a well-known example of an asterism in the constellation Ursa Major, the Great Bear.

Of the eighty-eight constellations, only a few are members of the zodiac, which are also known sun signs. When the sun’s position is between Earth and these constellations, their stars become background along the narrow path of the sun’s annual arc across the sky. The scientific name for th path is the ecliptic. Of course, it is Earth that is moving around the sun, but to us the sun appears to moving. To say that the sun is in Pisces means that this constellation is in the same direction as th sun and would be like a background for the sun if we were able to see Pisces during the day. Figure 1 shows that the daytime view from Earth on the vernal equinox puts Pisces on the other side of the sun

Whatever constellation is the current backdrop to the sun, its opposite on the ecliptic will be visib
in the night sky. This is because as Earth spins it faces away from the sun at night and thus away fro
the current zodiac sign. For example, during August when Leo is the sun's background constellatio
Aquarius can be seen at night. In late February, these positions are reversed and Leo is seen at nigh
Also appearing near the ecliptic are the moon and planets, which change location in the sky mo
quickly than do stars.

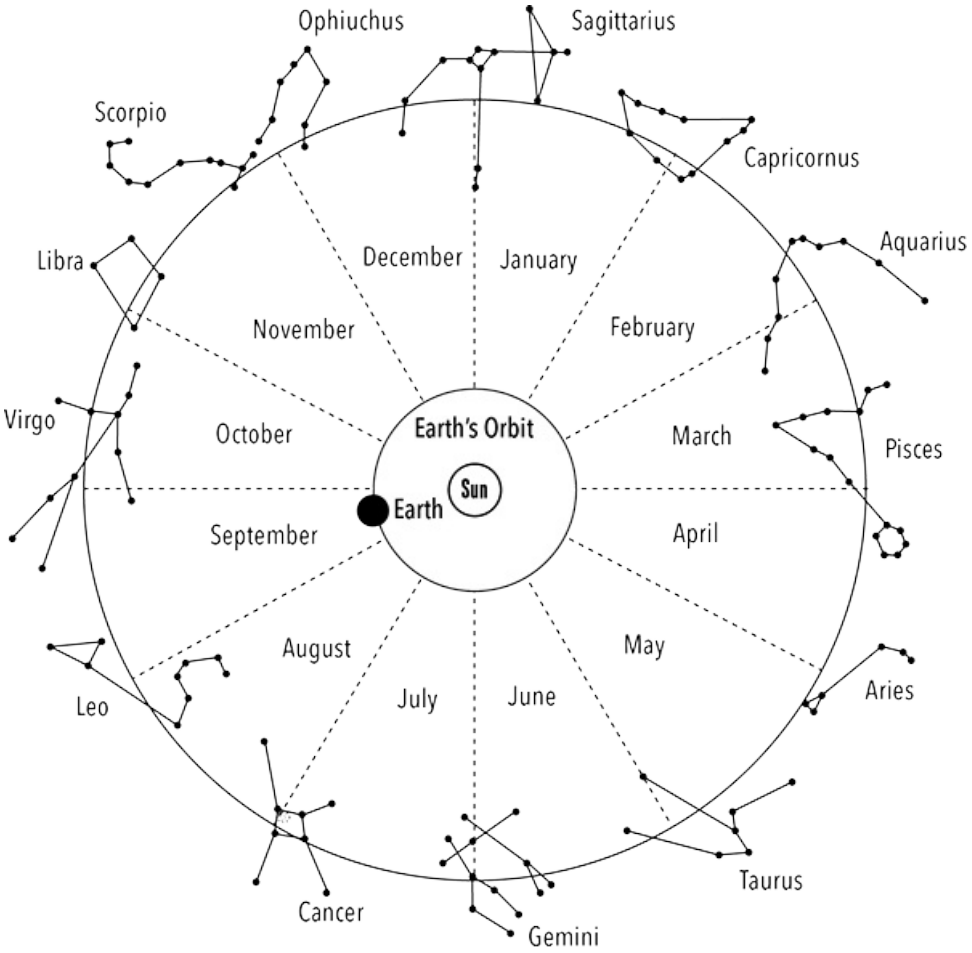

Figure 1.3. The constellations of the zodiac are along the sun's path called the ecliptic. On the vernal equinox in March, Pisces is on the opposite side of the sun from Earth.

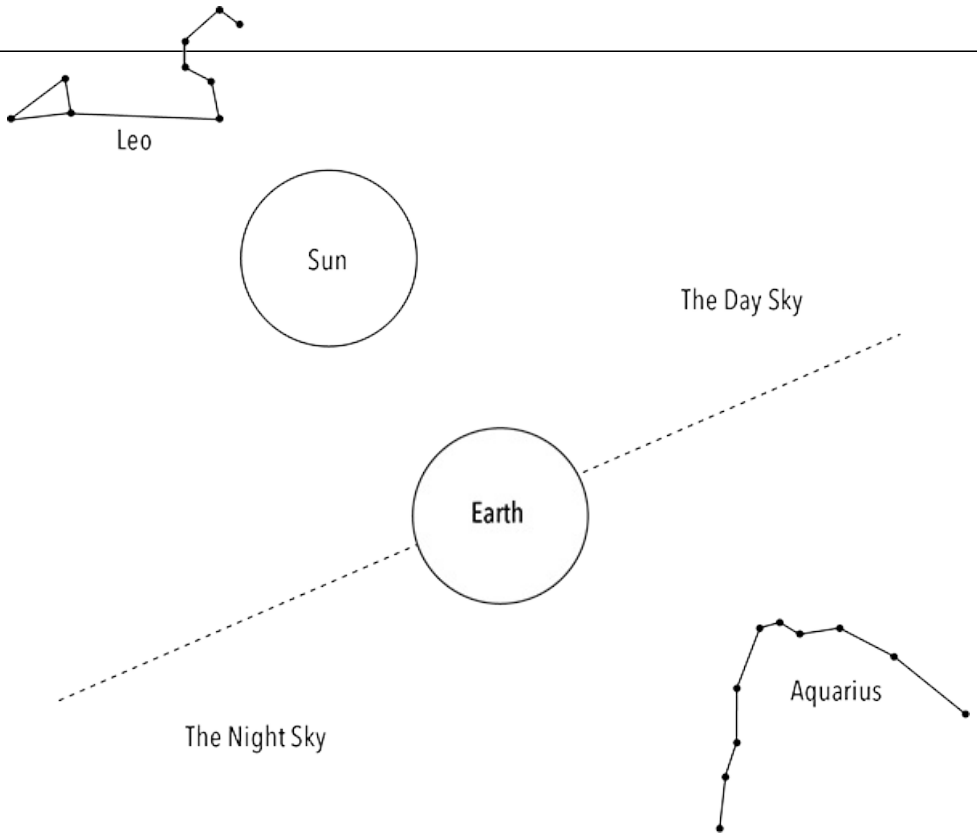

Figure 1.4. The constellations of the day and night sky are different. They are opposite each other on the circle of the ecliptic.

Modern astrology uses the twelve constellations and dates that were established more than tw thousand years ago. As a result, Aries is the first sign of the zodiac in astrology, and its time begins a the spring equinox. However, as previously mentioned, Pisces is the actual constellation in position o the ecliptic today. While the zodiac used in astrology is composed of fairly equal segments o approximately thirty days, the actual time that each constellation is the sun's backdrop varies becaus some constellations are larger than others. Also as previously mentioned, a constellation is a region o sky and not just the star pattern itself. In some instances, the ecliptic passes through just a small pa of a constellation/region of sky, which also affects the amount of time it serves as a backdrop to th sun. Virgo has the most time with forty-five days, and Scorpius the least at just seven days.

In fact, there are now thirteen constellations that fall within the ecliptic Table 1.1 lists th constellations on the ecliptic, their actual dates, and the number of days they serve as a backdrop the sun. Also included are the traditional astrological dates, which shift slightly, give or take one da each year. The actual dates and days as a backdrop listed in this table come from Dr. Lee T. Shapir the Director of the Morehead Planetarium at the University of North Carolina in Chapel Hill. The were made available on one of the National Aeronautics and Space Administration's (NASA) websit (spaceplace.nasa.gov/starfinder3/en/). Throughout this book when referring to the timing of constellation as a backdrop or background to the sun, the actual dates from this table are used.

Table 1.1. The Dates for Constellations on the Ecliptic

Constellation	*Actual Dates for the Zodiac*	*Days as Background*	*Traditional Dates Used in Astrology*
Pisces	Mar. 12–Apr. 18	38	Feb. 19–Mar. 20
Aries	Apr. 19–May 13	25	Mar. 21–Apr. 19
Taurus	May 14–June 19	37	Apr. 20–May 20
Gemini	June 20–July 20	31	May 21–June 21

Cancer	July 21–Aug. 9	20	June 22–July 22
Leo	Aug. 10–Sept. 15	37	July 23–Aug. 22
Virgo	Sept. 16–Oct. 30	45	Aug. 23–Sept. 22
Libra	Oct. 31–Nov. 22	23	Sept. 23–Oct. 23
Scorpius	Nov. 23–Nov. 29	7	Oct. 24–Nov. 21
Ophiuchus	Nov. 30–Dec. 17	18	
Sagittarius	Dec. 18–Jan. 18	32	Nov. 22–Dec. 21
Capricornus	Jan. 19–Feb. 15	28	Dec. 22–Jan. 19
Aquarius	Feb. 16–Mar. 11	24	Jan. 20–Feb. 18

Despite these differences, stargazing and astrology are not incompatible. While astronomy explor the stars in their current positions, astrology uses a historical system that holds a great deal meaning. Although I am not an astrologer, I believe that practitioners can draw energy from th constellations that appear in the night sky to enhance their work. After all, observing the stars is magical experience not to be missed.

While stargazing, if you are not sure whether you are looking at a star or a planet, remember th words to the song “Twinkle, Twinkle, Little Star.” Stars twinkle; planets do not. Traveling from greater distance, the light waves of a star are bent back and forth many more times before our ey perceive them than light coming from a planet. This bending of light waves in and out causes th twinkling effect. And speaking of light, anyone who has developed the ability to see auras will b familiar with this technique for observing the less-bright stars. The trick is to avert your eyes slight and not look directly at them; this is called averted vision. This works because we have two types light-detecting cells in our eyes called cones and rods. Cones help us detect color and are high concentrated at the center of the eyes. Rods are off to the side and are more sensitive to light. With little practice, you can become comfortable averting your eyes to see the fainter constellations.

As Earth rotates west to east, stars, planets, and the moon appear to move east to west —as does th sun—giving them the appearance of rising and setting. Of course, observing stars is easier when it fully dark, but there may be times when you want to witness a star rise. As we know, darkness doesn occur all at once like an electric light being switched off. In fact, twilight has three defined stages. Th first is called “civil twilight,” and during this stage only the brightest stars can be seen. You can eve read a book outside without the aid of artificial light. During the second stage, called “nautic twilight,” the horizon is still visible and the bright stars used for navigation can be seen. The thi stage is “astronomical twilight,” and it occurs when the horizon can no longer be seen. Finally, whe full darkness occurs even faint stars become visible. The three stages of twilight occur in reverse ord at sunrise.

While we know that twinkling is a way to tell the difference between a star and a planet, people ancient times and up through the Middle Ages did not. They did, however, notice a difference behavior and made intelligent distinctions. In ancient Egypt, stars were called “imperishable star and the planets were called “the stars that never rested.” [6] In medieval Europe, the stars and plane were called “fixed stars” and “wandering stars,” respectively. Fixed stars rose and set as did the su but they seemed to stay in the same pattern in relation to other stars. The planets were calle wandering stars because their positions changed within a shorter period of time; months or eve weeks. Fifteen stars noted by Heinrich Cornelius Agrippa (1486–1535), author of *Three Books Occult Philosophy,* were considered particularly powerful for magic by medieval astrologers

Europe and the Middle East. More information on these stars is provided in Appendix C.

Long before Agrippa pointed out the significance of the fifteen stars, the Persians designated fo stars as being particularly powerful and important. Dividing the heavens into quarters, Persia astronomers designated four of the brightest stars as "the royal stars." With one in each quarter, thes stars were used as calendar markers for the solstices and equinoxes and were also considere guardians of the cardinal directions.

In addition to constellations and asterisms, we will take a look at a couple of Messier object Catalogued by French astronomer Charles Messier (1730–1817), these objects include nebula clusters, and galaxies. Tired of the confusion caused by other space objects while comet huntin Messier cataloged them so he would know what to expect in certain areas of the sky. Messier objec are noted with his name or initial and a number, and sometimes include a constellation name. Fo example, there is Messier 44, M44, or 44M Cancri. The last designation indicates that it is locate within the area of the sky of the Cancer constellation. Others have traditional names, such as the tw included in this book: Messier 45 is the Pleiades and Messier 44 is the Beehive.

Shooting stars were a source of awe and mystery in the ancient world. Of course, these are not sta but meteors, which come from the particles that break away from comets and burn up when they ent Earth's atmosphere. In the ancient world, comets and meteors were believed to be omens or respons from deities to earthly events. As signals, they could foretell of approaching doom or they cou predict victory in an impending battle. Writings from 1200 BCE Greece indicated that shooting sta were used as oracles to interpret events or a king's actions. The Chinese, Japanese, and Koreans als studied meteor showers for divination purposes. Meteor showers are still a source of awe. Speakin about the Lyrids in a radio interview, Kelly Beatty, senior contributing editor for *Sky and Telescop* magazine, commented, "Meteor showers are truly magical. It's like the universe communicating wi us on some sort of basic, primal level. Meteors are the cosmos in action." [7]

Even though meteor showers are named after constellations, they actually have nothing to do wi the stars. Most meteor showers occur around the same time each year as the orbits of Earth and comet intersect. When this occurs, Earth passes through a stream of particles from the comet that bu up when they enter Earth's atmosphere. Unusually large meteors are called fireballs. Because th comet particles are traveling in the same direction, they appear to radiate from the same point and a usually named for the constellation in that part of the sky. Nevertheless, even though meteors are n stars, meteor showers carry a great deal of energy that we can tap into for ritual and magic. Append D provides a list of major meteor showers and the dates they can be seen.

[contents]

3. *Olcott, Star Lore, 9–10.*

4. *Thurston, Early Astronomy, 64.*

5. *Ellis, Early Irish Astrology. Réalta (vol 3. n. 3, 1996).*

6. *Remler, Egyptian Mythology, A to Z, 22.*

7. *National Public Radio, Weekend Edition Sunday with host Rachel Martin, April 21, 2013.*

Chapter Two

GettIng Started StargazIng

Whether you want to simply read a star map, step outside and find a particular constellation, or spe time outdoors becoming familiar with the layout of the night sky, this chapter provides tips on gettir started. But first, let's learn about celestial coordinates, which aid in understanding and reading st maps.

The celestial sphere is a concept that helps us understand the information on star maps. We ca visualize it like Earth's atmosphere, a sphere that surrounds our planet, or as two great domed ceilin covering the Northern and Southern Hemispheres. Like the great ceiling in New York City's Gran Central Station, these domes are decorated with the constellations. As Earth rotates, the stars that v see on the celestial sphere appear to move, rising and setting like the sun. Where the northern ar southern domes meet is called the celestial equator, which is directly above the physical equator o Earth. As mentioned in chapter 1, the celestial north and south poles are directly over the corresponding points on Earth. Our view of the celestial sphere is defined by the horizon. If we are flat, open country, the horizon is larger than what is visible in a city. Directly overhead is a imaginary point called the zenith. An imaginary line drawn from north to south through the zeni divides the sky into east and west.

Coordinate points on Earth are called latitude and longitude. On a map of Earth these are indicate by lines that run east and west, and north and south. Latitude lines run east and west parallel to th equator. Marking the distance from the equator, latitude is measured in degrees. You will find mor information on latitude in appendix A. Knowing your latitude will help you determine whic constellations will be visible to you. The equator is zero latitude. Latitude lines north of the equat are indicated with a plus sign, and those south of the equator with a minus sign. On the celesti sphere, latitude is called "declination" and it is indicated in the same way using plus or minus signs indicate positions north or south of the celestial equator, which is zero declination.

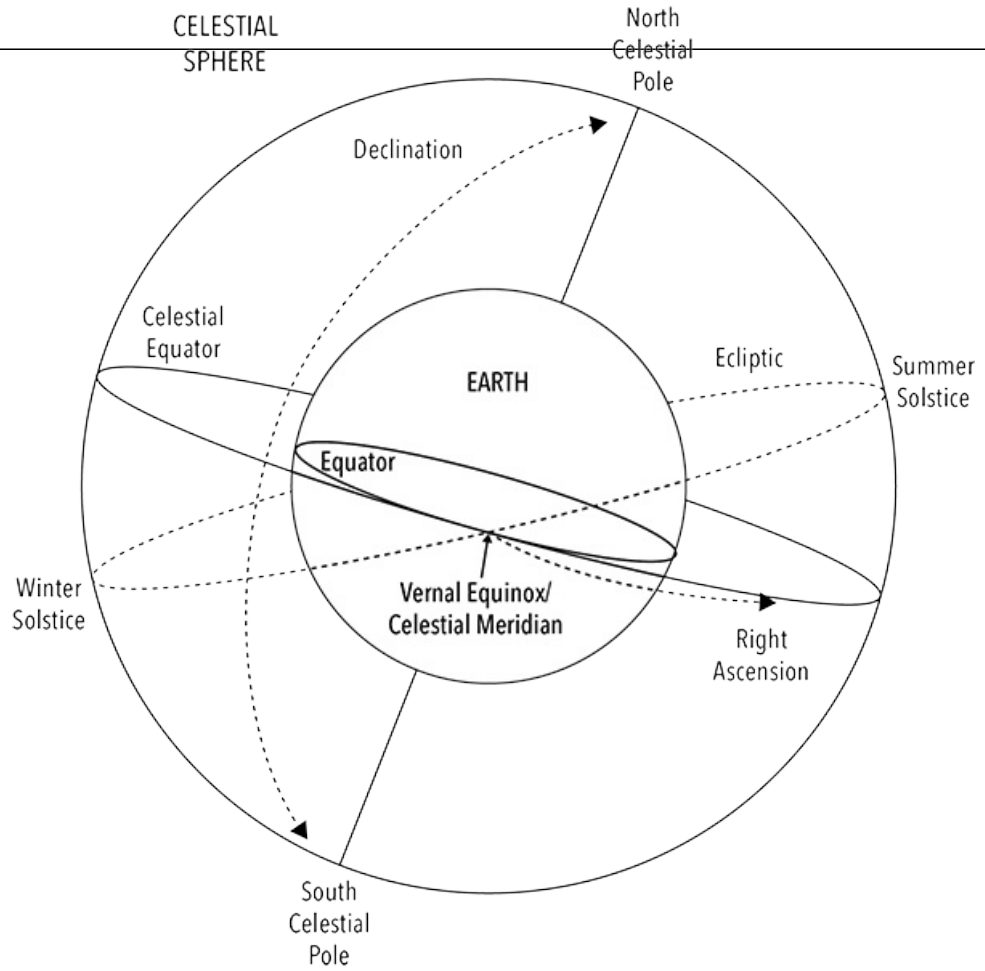

Figure 2.1. The concept of a celestial sphere and celestial coordinates helps us understand the information on star maps and how it relates to Earth.

Longitude on Earth is also measured in degrees from an imaginary line called the prime meridia which runs from the North Pole to the South Pole. Like the equator, the prime meridian is ze degrees. It is no accident that this line passes through Greenwich, England, the home of the Roy Observatory. Founded in 1675 by King Charles II, the Royal Observatory was instrumental establishing a common meridian for east/west coordinates and for calculating time worldwide. Tim on this meridian is called Greenwich Mean Time.

The equivalent to longitude on the celestial sphere is called “right ascension,” and it is measured hours. Just as our day contains twenty-four hours, right ascension runs eastward from zero to twent four. Zero right ascension is the point where the celestial equator and ecliptic cross. Sometimes calle the celestial meridian, this point marks the spring equinox.

It is also important to understand star names. Although the traditional names of stars are frequent used, they also have a standardized scientific designation. As noted in chapter 1, astronomer Johan Bayer established a naming convention. This naming system uses the Greek alphabet starting with t brightest star in a constellation. For example, Alpha Centauri is the designation for the brightest st in the constellation Centaurus, and Beta Centauri is the second brightest. These designations use t Latin genitive or possessive form of the constellation’s name. For example, Aldebaran is the alph star in the constellation Taurus, so its Bayer designation is Alpha Tauri, which means “the alpha Taurus.” However, there are exceptions when it comes to the alpha designation, as is the case in th

constellation Orion where Beta Orionis is actually brighter than Alpha Orionis. These two stars a
better known by their traditional names of Betelgeuse (alpha) and Rigel (beta).

Because of the Bayer naming convention, it is helpful to become familiar with the Greek alphabet
star maps generally use only lowercase Greek letters to distinguish stars rather than spell out the
names. Table 2.1 contains the Greek alphabet. The order of letters in this table runs vertically dov
the columns, i.e., alpha, beta, gamma, and so forth.

Table 2.1. Lowercase Letters of the Greek Alphabet Used in Star Names

α Alpha	η Eta	ν Nu	τ Tau
β Beta	θ Theta	ξ Xi	υ Upsilon
γ Gamma	ι Iota	ο Omicron	φ Phi
δ Delta	κ Kappa	π Pi	χ Chi
ε Epsilon	λ Lambda	ρ Rho	ψ Psi
ζ Zeta	μ Mu	σ Sigma	ω Omega

To accommodate the limited number of letters in the alphabet for constellations that have more tha
twenty-four stars, Bayer used lowercase and then uppercase Latin letters. For example, the twent
sixth brightest star in Centaurus would be called “b Centauri.” The forty-ninth star would be “A
Centauri.” This cumbersome method of naming stars gave way to Flamsteed numbers.

Developed by English Astronomer John Flamsteed (1646–1719), stars are numbered in eac
constellation without regard to their brightness starting with the lower, rightmost star on a star ma
Actually, stars with a Bayer designation (Greek letter) also have a Flamsteed number. Like the Bay
designations, the Flamsteed system uses the Latin genitive form of the constellation’s name. Fo
example, the famous star Betelgeuse (traditional name) in the constellation Orion can be called
Orionis (Flamsteed designation) or Alpha Orionis (Bayer designation). You may even find it noted a
19 Alp Ori on star charts. Its Flamsteed number is 19, its Bayer designation is alpha, and Ori is th
abbreviation for Orion. Most maps use the Bayer designation for stars that have them and th
Flamsteed numbers for those that do not.

In some cases, a star is not just “a” star. It can be a binary, double, or multiple star system, and th
is where naming conventions get complicated. You may find designations using numbers, Lati
letters, and sometimes superscript numbers and letters. Most often, you will see multiples represente
as Alpha-1 and Alpha-2, and so forth, or sometimes Alpha-A and Alpha-B. The difference in using
number or letter is to distinguish multiple stars that are far apart or closer together (relative
speaking), respectively. For our purposes, and simplicity’s sake, I have used the naming conventio
where a number is appended to the star’s name. For example, Algorab, the delta star in th
constellation Corvus, is a double star with its components designated as Delta Corvi-1 and Del
Corvi-2.

Of course, there are exceptions and the alpha star in Centaurus is one of them. It has three stars, tw
of which are identified as Alpha Centauri-1 and Alpha Centauri-2. However, instead of being calle
Alpha Centauri-3, the third star only has its traditional name, Proxima. Another exception is th
spectroscopic binary stars do not have completely individual designations. For example, the delta st
in Lyra has three components, but two of them share the Delta Lyrae-1 designation as Delta-1a an

Delta-1b. The other star in this threesome is called Delta Lyrae-2. I have included this information f those who want to incorporate a full range of star color into their magic. There is more about worki with star color in Chapter Three and Appendix B.

Before heading outdoors to find your way among the stars, it is helpful to become familiar with star map. This can be a simple, conventional piece of paper, a more versatile planisphere, or a hig tech smartphone app. Knowing what you are going to be looking at and having something to refer when you get outside will make star finding easier.

There are two conventions to get used to with a star map. Unlike the terrestrial maps that we a used to, many star maps have east and west reversed; east is on the left and west on the right. The are designed for the user to face south, which puts east and west in their correct orientation. The oth convention for star maps is to have east on the right and west on the left where we are used to seei them, but north and south reversed. These are designed for the user to face north. In both convention the direction that a user should face is the one noted at the bottom of the map.

For consistency, all of the maps in this book have been drawn using the first convention of faci south. Likewise, the directions given throughout the book for locating stars and constellations assu that the reader is facing south. It is important to note that the maps in this book are approximations show the position of constellations and how they relate to each other. Also, they are intended suggest the constellations rather than reproduce entire star patterns, which makes it easier to use the in ritual and magic work. The star maps that appear with the individual entries in this book sho where the suggested star patterns fall within the overall figure of their constellations. Keeping t maps consistent means that some of the graphical depictions of the star figure characters may appe upside down or sideways. Hercules and Pegasus are two examples. While this may seem odd from pictorial aspect, it is actually helpful to have these views in our minds when we are outside at nig looking at the constellations.

A number of star maps in books and on the Internet are drawn in the shape of a circle to simulate t celestial sphere. This type of map is used by holding it over your head and aligning it with the cardi directions. The center of the star map represents the zenith. Because the stars we can see change wi the months and seasons, it is important to have the appropriate star map, as well as one th accommodates your latitude. The Internet is an excellent source for obtaining current star maps. good source is the Evening Sky Map, which is produced monthly and available at SkyMaps.co These maps also note the position of the moon throughout the month as well as star magnitudes.

The magnitude of a star indicates its brightness. While the Bayer naming convention also does thi it is somewhat arbitrary and only indicates the order of star brightness within a constellation. Stell magnitude is applied to all stars regardless of constellation. It began with Greek astronom Hipparchus around 129 BCE when he designated the brightest stars as being of the first magnitude. H called less bright stars second magnitude, and so on. The faintest stars were sixth magnitude. Ptolem adopted this system, and it remained unchanged for about fourteen centuries. With the aid of h telescope, Galileo (1564–1642) found many more stars than Hipparchus and Ptolemy had been able see. Over the centuries, as bigger and better telescopes were developed and more stars could be see the magnitude system was expanded. However, it has remained locked into counting backward wi

the largest numbers representing fainter stars. As light-measuring equipment advanced, the magnitud system was refined with the brightest stars now having negative numbers.

The simple long and short of the magnitude system for laypeople looking at a star map is the size the dots that represent stars. The larger the dot, the brighter the magnitude of the star, which for mo of us is more straightforward. However, now you will know why a map legend will show bigg numbers for smaller dots. The star maps in this book do not show magnitude, so the dots are all th same size.

Unlike the seasonal maps, another type of map called a planisphere is good for the entire year. It especially helpful for becoming familiar with the night sky through the months and seasons. This also a good tool if you are an armchair stargazer and simply want to know which constellations a current in the night sky. The planisphere is flexible and can be set to show the sky for any date or tim during the year. Like any star map, it is important to get one that is appropriate for your latitud Planispheres cover a lot of ground, so to speak, and run in ten-degree increments, for example 30º 40º north.

A planisphere is made of plastic or laminated cardboard and has a center disk that can be rotate With the constellations printed on it, this center disk represents the sky and shows the rotation of sta around the north celestial pole. Of course, one designed for the Southern Hemisphere rotates arou the south celestial pole. The larger, stationary part of the planisphere shows the horizon. Unlike st maps, east and west are in the positions (right and left) that we are used to; however, “north” is printe at the bottom of the horizon, which means you need to face north. While the planisphere is low-tech, is versatile. If you turn it over, the back has “south” at the bottom horizon so you can use it facin south, too.

To use a planisphere, simply rotate the center disk until the current date and time are aligned. Ad an hour if the current time is on daylight-saving time. Of course, being able to rotate the “sky” als allows you to display the constellations for any date and time during the year. In addition, by rotatin the disk you can determine when a constellation will rise and set. To do this, rotate the center until th constellation is on the eastern horizon, and then note the time and date. This will tell you when th constellation will rise. Rotating the center again until the constellation is on the western horizon wi give you the setting time and date.

Of course, there’s an app for that. Smartphone technology puts so much at our fingertips, includin the stars. Two popular apps are StarMap, available at iTunes (http://www.apple.com/itunes/) for th iPhone and iPad, and Google Sky Map for Android systems (google.com/mobile/skymap/). A goo source for a range of sky apps is AppAdvice (appadvice.com/appguides/show/astronomy-apps). Fo computers, an online source for star maps is the website of *Sky and Telescope* magazin (www.skyandtelescope.com), which is full of great information, interactive sky charts, an information on space-related apps. For anyone who prefers armchair stargazing or is unable to go o to a good location, apps on smartphones and tablets and interactive websites are a good way to lea about the stars.

Getting Outside

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