A Collection of Curricula for the STARLAB® African Mythology Cylinder

Including:

A Look at the African Mythology Cylinder

African Mythology Map

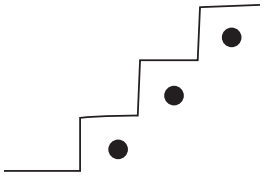
African Skies by Kevin Cuff & Alan Gould of the Lawrence Hall of Science

Curriculum Guide Contents

A Look at the African Mythology Cylinder

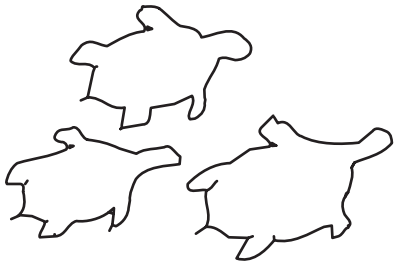
Orion or Osiris

When a Pharaoh died, his soul was judged by Osiris, the Egyptian Lord of Everything. A good life was rewarded by peaceful rest in the west, where the stars seemed to set at the end of their journey across the sky. A bad life was punished by sending the spirit to the north where it would never find rest, but be forced to eternally circle about the North Star with the other beasts.



Orion's Belt

These 3 stars represent a staircase up to heaven to the Dogon. To the Bushmen, the 3 stars appear as 3 zebras (not depicted in this cylinder) — a male in the center flanked by 2 females.



Other Orion Stars

The stars near Orion's feet and knees appeared as tortoises to the Bushmen (perhaps because they appear to move across the sky more slowly than the stars near Orion's head and shoulders).

Sirius

Sirius is the Egyptian goddess Isis, companion to Osiris. When Isis began to rise in the east just before the sun, it meant that the waters of the Nile were about to rise, flooding was about to occur, and a new year was about to begin. This was also crucial information to the Dogon who lived near the Niger river, since it told them that a new agricultural cycle was underway and that it was time for planting. If seeds were planted too early, sprouts would come up too soon, before the rain. If the planting happened too late, the sprouts might not grow to maturity.

To the Dogon, Sirius was one of the most important objects in the sky. It had 2 small heavy companion stars, one of which was called Po Tolo, or "deep beginning." They believed that Amma, the creator god who made the sun and the moon, made 8 different seeds. Po Tolo was the first and the smallest of these. The other stars were also seeds of different types of grain flung out by Amma into the heavens.

To the Dinka, the stars are the night time cattle-fires of people who tended livestock on the plains.

Canopus

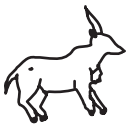
The Basotho believed that the first person to see Canopus rise would be rewarded with a very prosperous year.

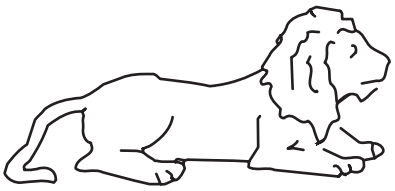
Taurus

To the Bushmen of the Kalahari desert, this constellation resembled a hartebeest.

Castor, Pollux and Procyon

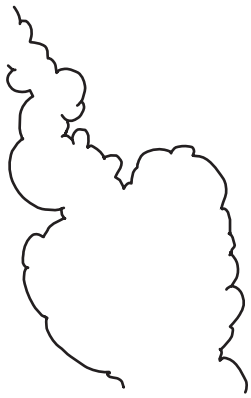
Represented grazing elands to the Bushmen.





The Pleiades

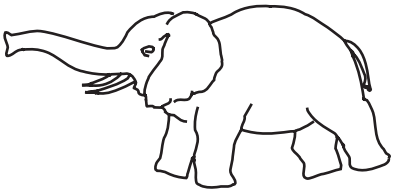
The Masai of East Africa saw the Pleiades above the horizon from September to mid-May. They knew that these 6 stars which stayed in a group like a herd of cattle, were visible during the rainy season. The Khoikhoi (Bushmen) referred to the Pleiades as the "rain stars."(It is interesting to note that the Pleiades are so close to the Hyades, the rain stars of the ancient Greeks.) The Bantu saw the Pleiades in the shape of a plow. When the Pleiades rose just after sunset, it was time for digging, plowing and planting. The Taureg saw a flock of chickens when they looked at the Pleiades.



The Milky Way

According to Bushmen legend, the Milky Way was created when a girl threw wood ashes from a campfire into the sky to help a lost hunter find his way back to camp. She later created some of the brighter stars by throwing roots into the sky. According to the legend, the white stars are ready to eat, but the red stars are old roots that are no longer edible.

To the Pokomo of East Africa, the Milky Way represents smoke from the campfires of the "ancient people."

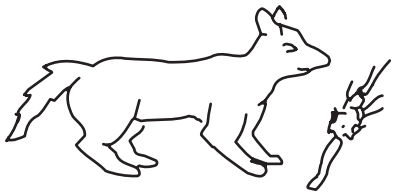


The Big Dipper

The Taureg saw a camel in the shape of the dipper. Others saw an elephant with its trunk extended.

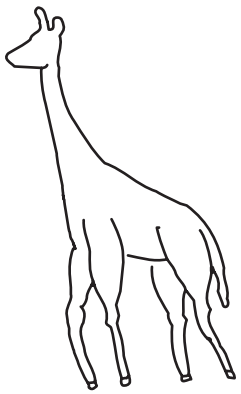
Polaris, the North Star

The people of Kemet in the Nile valley saw a Jackal at the North Star. Others saw the "original seed"or grain there.



The Southern Cross

The Basotho Bushmen saw a giraffe with outstretched neck. Other Bushmen saw a pride of lions, while the Zulu (Bantu) saw the Southern Cross as the Tree of Life.

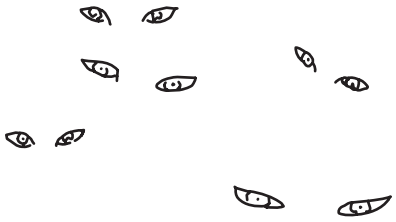


Sun and Moon

Although not depicted on the cylinder, the sun was perceived as being dependable and predictable, and represented the better part of life. The moon was seen as constantly changing (because of its phases), unreliable and moody.

Other Stars

The Kalahari Bushmen saw the eyes of wild animals looking out from the darkness. The Dinka saw cattle-fires, and the Dogon saw different types of seeds (corresponding, perhaps, to the differing brightness of stars, and different ways they cluster together).



Sources

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Anthony Browder, author of Nile Valley Contributions to Civilization published by Institute of Karmic Guidance, 1992. Washington, DC.

April Whitt, author of "African Skies," revised 3/4/93, The Adler Planetarium, Chicago.

Keith Motley, Dean □ African American Studies, Northeastern University, Boston, MA.

Anne Pritchard, Oconee Regional Educational Service Academy, Sandersville, GA.

Jim and Shirley Smith, Kensington House, Chickamauga, GA.

African Mythology Map

This cylinder portrays constellations seen by a variety of African cultures including:

- The Dogon from West Africa's Republic of Mali
- The Egyptians of the Nile Valley in northern Africa
- The Masai from Kenya and Tanzania
- The Bantu of Kenya, equatorial and southern Africa
- The Bushmen of the Kalahari desert and southern Africa
- The Zulu from Natal on the eastern coast of South Africa

Contributed by Kevin Cuff and Alan Gould from the Lawrence Hall of Science

African Skies

The Southern Skies

Note

In these planetarium activities, text that is in italics is suggested "script" for the teacher to use, but not intended to be read word for word.

Objective

To observe the sky as seen by various Southern African peoples who live in the Earth's southern hemisphere and see how it differs from that of the northern hemisphere.

Skills

Cooperative learning • observing • listening • describing

Prerequisite

Students must know how to use a star map such as those found in PASS Vol. 5, *Constellations Tonight*. It is best to do the Constellations Tonight program with them first. For young students, map orientation may not be possible, but simple drawing of star patterns may be possible. For VERY young students, even drawing star patterns may not be possible, but still showing how the stars shift position as they travel south in latitude, and the later parts of the lesson may still be of value.

Preparation & Procedure

- Set up the STARLAB dome and projector. Place the Starfield Cylinder on the cylinder platform, and set the latitude so that it matches that of your location. The exact time is not important, but it is always effective to let your students see the sky as they would see it the evening of the day of this lesson (use a planisphere or see PASS Vol. 5, *Constellations Tonight* for maps that show how to set the sky for any particular season). As students walk in, the stars should be up and African music should be playing softly.
- When all students are seated, set a mood:

Like watchful eyes of the many ancestors who have lived their lives on Earth and already passed on, thousands and thousands of sparkling stars dot the clear night sky above our heads.

Some of these stars remind us of cords stretched every which way across the sky, or strands of a spider's web along which our ancestors may travel.

Take care not to concern yourself too much with how many stars there are. For if you try counting them, your soul may become troubled because there are so many.

Procedure

- For dramatic effect, slowly turn up music for a short time. Remove a sun hole cover from a hole that is close to "sunrise" and slowly fade to daylight with sun positioned above eastern horizon while fading down stars. Fade out music.
- Tell the class:

Africa, the second largest continent on Earth, is home to as many as 6000 tribes of people of many races and cultures who speak hundreds of different languages. These groups of people all live within two general geographical regions; above the Sahara desert in Northern Africa, and below the Sahara in Southern Africa. We will soon see what the sky looks like to the people who live in Southern Africa. Much of

MATERIALS

For the whole class

- STARLAB Portable Planetarium
- Starfield Cylinder
- African Mythology Cylinder
- arrow pointer
- audio tape player/recorder
- audio tape of African music (check local music stores)
- (optional) extra red reading lights (see PASS Vol. 4, *A Manual for Using Portable Planetariums*)

For each student

- A blank star map (sheet of paper with a pre-drawn circle and Northern, Eastern, Southern, and Western horizons labeled, see master on page 11)
- a pencil

Southern Africa lies below the equator within the Earth's southern hemisphere.

To become familiar with the sky in the southern hemisphere, we will first observe the sky from where we live and compare it with the sky seen by people who live in Southern Africa. Then we will look for two very important groups of stars.

Optional

Turn on reading lights.

- Hand out a blank star map to each student.
- Ask for a volunteer to point out the Big Dipper with the arrow pointer. Also have a volunteer review for the class how to find the North Star.
- Ask students to find a group of stars in the planetarium sky that they recognize. Have them draw the groups of stars on their sheets. If they do not recognize any star patterns other than the Big Dipper, they may either draw the Big Dipper, or simply pick out an interesting pattern of stars that they feel they could easily recognize again. Students who finish drawing early may draw a second or third star pattern as well.
- When the students are finished drawing, tell them that they will now travel to Africa. Then smoothly and slowly reposition the star projector so that latitude is 0° and Polaris is barely above the horizon in the north.
- Have the students observe the sky and find the same groups of stars they found earlier. Have them draw those stars on their sheets, and compare the positions of both.

Ask: "How would you describe the differences in their positions?" (All the patterns have shifted toward the south.) Ask: "Where is the North Star now?" (On the horizon.) Ask: "Where do you think the North Star appears if one travels even farther south in the southern hemisphere?" (It will appear lower and lower in the sky the further south one goes and will eventually disappear below the northern horizon.)

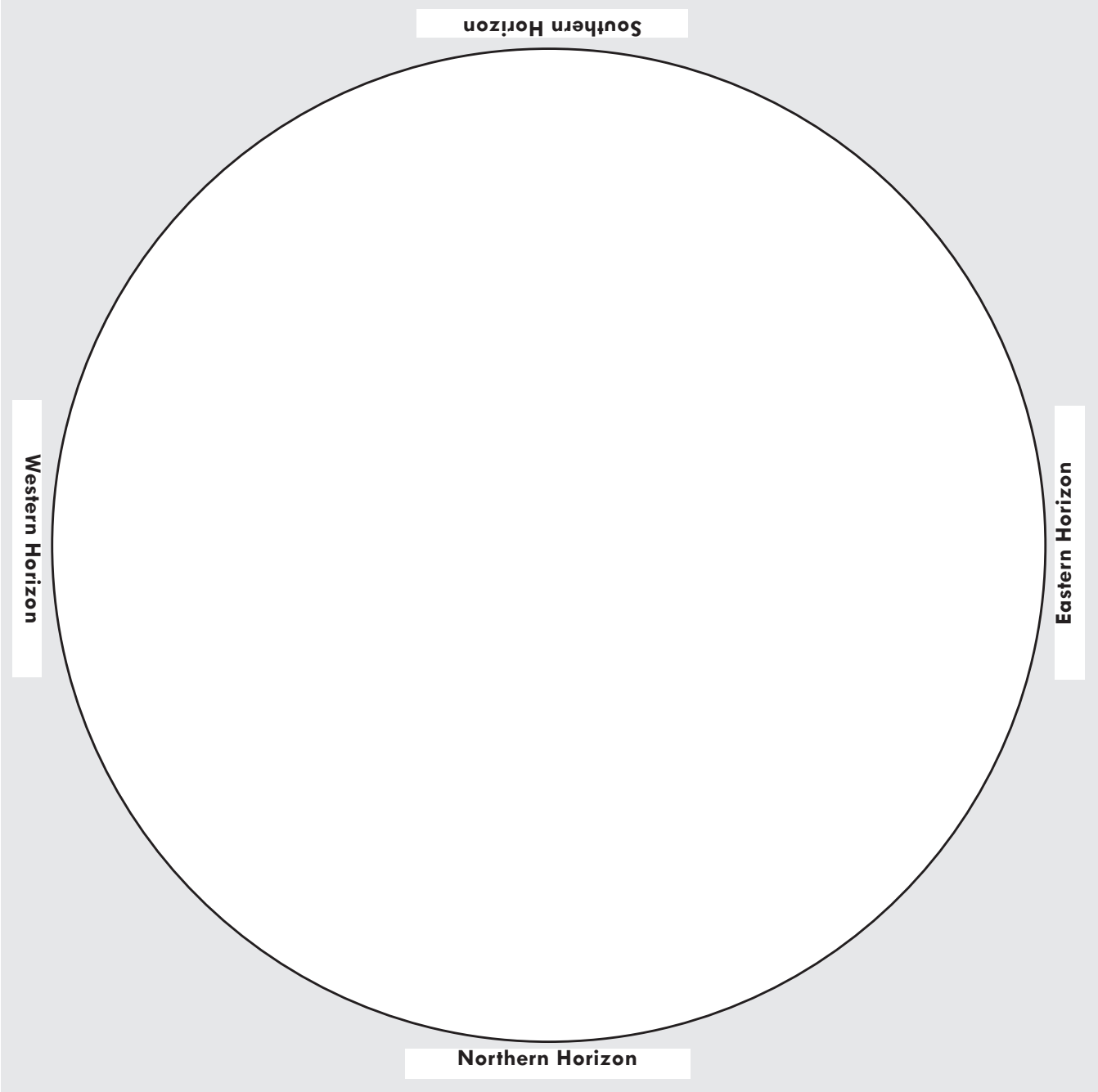
- The star projector latitude adjustment only goes to 0°, but you can temporarily go farther south in latitude to verify that the North Star disappears. Just gently and slowly lift the back of the base of the star projector until Polaris descends below the horizon.
- Tell the students that certain things in the southern hemisphere skies can never be seen from the northern hemisphere. Change from the Starfield Cylinder to the African Mythology Cylinder and point out the following things that can never be seen from the northern hemisphere:
- Southern Cross (has image of a giraffe over it)
- Alpha Centauri (the closest star to us other than the sun; it's the brightest star just east of the Southern Cross —"behind" the giraffe)
- Large Magellanic Cloud (marked LMC)
- Small Magellanic Cloud (marked SMC)

Note

These beautiful "clouds" have been known for thousands of years to the peoples of the southern hemisphere who do not call them "Magellanic" at all. (That name comes from the European explorer, Magellan, who "discovered" them when he sailed into the southern hemisphere.)

While you have the African cylinder on, you may have students speculate about what some of the other pictures may be representing. The images are from a variety of African cultures, Africa is a BIG continent. Much more will be done in this vein in the later activity, "What Does Your Village Call It?"

The Southern Skies Blank Star Map



MATERIALS

For the whole class

- STARLAB Portable Planetarium
- Starfield Cylinder
- African Mythology Cylinder
- arrow pointer
- audio tape player/recorder
- audio tape of African music (check local music stores)

For each student

- noisemaker (a small toy whistle, rattler, or shaker)

Find Isilimela and Naka

Objective

To become familiar with two prominent celestial objects as seen by various Southern African peoples who live in the Earth's southern hemisphere.

Skills

Observing • listening • describing

Preparation & Procedure

- Set up the STARLAB dome and projector. Place the Starfield Cylinder on the cylinder platform, and position latitude at 0°. Adjust time to be 9 p.m. in mid-July. The Big Dipper should have the front edge of its bowl "resting" on the northwest horizon and its handle pointing upwards towards Arcturus, high in the western sky.
- Tell the class that the planetarium is set for 9 p.m., July 15, in the southern part of Africa (near 0° latitude). Even if you have already done the "Southern Skies" lesson, remind the class that Africa is the second largest continent on Earth and home to as many as 6000 tribes of people of many races and cultures who speak hundreds of different languages.
- Have a student point out the Big Dipper and the North Star. Make sure the class is oriented in regard to the cardinal directions: North, East, South and West. Point out Arcturus to them. Explain that we are going to "stay up all night!"
- Switch on diurnal motion. Have the class watch the Big Dipper sink into the northwest horizon. Then have them watch Arcturus set in the west. Ask them to describe which way the stars seem to be moving in the west. (Down, stars are setting.) In the north? (Toward the left, or west in small arcs.) In the south? (Toward the right, or west in small arcs.) In the east? (Up, stars are rising.) Continue diurnal until the Pleiades are positioned just above the eastern horizon, then switch off diurnal.
- Tell the class:

Now the time is about 4 a.m. There is a tiny group of stars, a cluster, which is very distinct. Can anyone find this cluster?

Let a student point it out.

Ask: "Does anyone know the name we give to it?" (The Pleiades)

Many different groups of Southern African people have recognized this cluster. The Zulu and Xhosa people call them Isilimela, or the "digging stars." They are called this not only because they resemble a small plow, but also because their appearance in the western sky signals the beginning of the winter rainy season in Southern Africa, a time when soil should be prepared for new crops to be planted. Thus the appearance of Isilimela marks the beginning of the new year, and many people of Southern Africa engage in renewal celebrations and ceremonies at this time.

Now we will look for a very bright and important star. We will welcome it with sounds of greeting.

Procedure

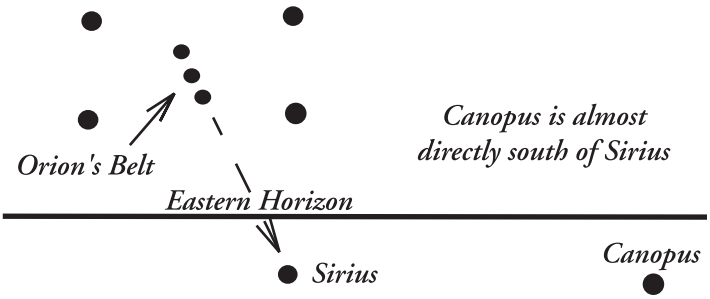
Hand out one small toy whistle, rattler, or some other noise maker to each student.

Tell them:

As we continue toward dawn look into the planetarium sky toward the southeast. As soon as you spot a conspicuously bright, individual star, make some noise using your rattlers or whistles.

Note

It is important that you point out the southeast part of the sky as the area for students to search, NOT the east. Switch on diurnal motion. All of Orion will rise in the east as students look for Canopus in the southeast. When both Sirius and Canopus are above the horizon and the room is filled with a chorus of sound indicating that most people have found the star, switch off the diurnal motion.



Explain:

The star that you have found is commonly known as Naka. Every year when Naka appears in the southeast, it signals the beginning of a new ceremonial season. In many parts of Southern Africa it is believed that the first sharp-eyed observer to spot Naka will receive heaps of good luck throughout the new year. Congratulations to you all!

Note

The name Naka is used by the Sotho-Tswana, Lobedu, and Venda people.

Procedure

- Collect noise makers.
- For older students, you may explain that they just observed a "heliacal rising." Heliacal rising of a star occurs each year at the time when the star is first first visible in the pre-dawn sky. For certain stars, it has great meaning in many cultures.
- Change to the African Mythology Cylinder and have students find Isilimela (it would be near the hartebeest's head; a hartebeest looks sort of like an antelope), and Naka (the campfire north of the LMC).

Optional

Inform students about what the stars of Isilimela (Pleiades) mean to other cultures in the world. (See PASS Volume 5, *Constellations Tonight*.)

MATERIALS

For the whole class

- STARLAB Portable Planetarium
- Starfield Cylinder
- arrow pointer
- audiotape player/recorder
- audio tape of rain falling
- African Horizon: a strip of paper about 15 cm (6") wide and 3-4 meters (3-4 yards) long. Light brown butcher paper can be cut appropriately for this purpose (see Preparation)
- 12 cardboard Horizon Markers labeled with a different month of the year on each one. (Optional: have velcro strips on their backs; Post-its™ can be used as markers instead of cardboard)
- masking tape (the most sticky kind you can get)

Optional

- extra red reading lights (see PASS Vol. 4, A *Manual for Using Portable Planetariums*)
- a velcro strip eastern horizon affixed to the STARLAB dome
- a custom-made African Horizon Light Projector. See PASS Volume 11, *Astronomy of the Americas*, for ideas of how to make horizon light projectors

For each student

- a pencil
- a handout with the African Horizon on it

Sunwatching All Year

Objective

To use observations of the sun's annual motion to tell the time of the year in a manner similar to that of various groups of Southern African people.

Skills

Cooperative learning • observing • listening • recording • describing

Preparation

- One-time preparation — create an "African Horizon" out a strip of paper about 15 cm (6") wide and 3-4 meters (3-4 yards) long — light brown butcher paper. Also create a set of 12 cardboard Horizon Markers labeled with a different month of the year on each Marker. Optional: Create a velcro strip-horizon attached to the dome and fit the African Horizon and Horizon Markers with velcro pieces of the opposite gender.

  Note

  Make sure to attach only the loop velcro on the dome (the soft, fuzzy side) because the hook velcro can cause the dome to stick to carpeting.

- Before class — put fresh masking tape (if necessary) on the top of each cardboard Horizon Marker with half the tape extending up "unstuck" so that they can hang on the horizon.
- Set up STARLAB dome and projector. Place the Starfield Cylinder on the cylinder platform, and set the latitude for 0° latitude.
- Hang the African Horizon on the eastern side of the dome about a meter up from floor level (waist-high or so) with pieces of masking tape at 20 cm (8") intervals. After the class(es) you can leave the tape on. With first time use, you can fold the tape over onto the back side of the horizon — then in later uses, with care, additional tape pieces can be "re-used" after folding the over. [Alternatively, set up and test the African Horizon light projector.]
- Remove the most northerly sun hole cover (June) and position the sun just above the horizon in the east (rising).

Horizon Marker

African Horizon

Procedure

- As students walk in, have stars on and African music playing softly.
- When all students have been seated, introduce the lesson as follows:

For many groups of Southern African people, the sun is seen as the most important and powerful celestial body. It is often used in praise poetry and mythology to symbolize permanence, diligence, reliability, intelligence, and stability. Numerous cultural heroes, mythological figures, and important chiefs have been associated with the sun's light and heat.

Some groups of Southern African people have developed ways of telling the time of the year by using observations of the sun. To see how, we will observe and record the sun's position along the horizon relative to familiar objects at different times of year and examine the relationship between the motion of the sun and times of year in Southern Africa.

- Slowly fade stars.
- Optional: slowly fade up African Horizon Light Projector if you have chosen to make and use one.
- Place the sun just above the eastern horizon at its most northerly position.
- Distribute African Horizon handouts and pencils to each student.
- Explain:

Many groups of African people have carefully watched the sun for countless centuries. The Swazi, Zulu, Xhosa, and Sotho people of Southern Africa watched to see where on the horizon the sun rose. Through such observations they long ago realized that the position of sunrise along the eastern horizon varies from month to month throughout the year. Here we see the sun at its most northerly position. Does anyone know what we call the day that the sun is in this position in the northern hemisphere? (Summer solstice.) In the southern hemisphere this would be the winter solstice.

- Invite a volunteer to place the June cardboard Horizon Marker along the STARLAB's eastern horizon to mark the sun's position at this time. Also instruct students to mark the sun's location on their handouts.
- Optional: Turn on reading lights.
- Cover the June sun hole and remove the July sun hole. Again place the sun just above the horizon in the east. Invite a new volunteer to place the July cardboard Horizon Marker along the STARLAB's eastern horizon to mark the sun's position at this time. Also instruct students to mark the sun's location on their handouts.

Repeat the previous step 10 more times so that the sun's position has been marked for every month of the year. Then ask students to offer their interpretations of what they have observed and recorded. After accepting a number of interpretations, explain:

Because the sunrise position seems to linger at the winter and summer solstices, while moving more swiftly along the horizon between those times, it is often said the sun stays in a "summer house" and a "winter house," and moves from one house to the other. In fact, the Xhosa people refer to the extreme points of sunrise as "Injikolanga," the "turning back of the sun."

By noting the positions of the sun relative to familiar objects along the horizon, Southern Africans were able to determine particular times of the year when various festivals, celebrations, and important seasonal events were to occur.

MATERIALS

For each student

- African Constellations Star Map

For the class

- STARLAB Portable Planetarium
- African Mythology Cylinder
- arrow pointer(s)
- audiotape player/recorder
- audiotape of African music

Optional

- extra red reading lights (see PASS Vol. 4, *A Manual for Using Portable Planetariums*)

African Constellations Star Map

Objective

To become adept at the use of a star map to locate constellations that are culturally relevant for various groups of Southern African people.

Skills

Cooperative learning • observing • listening • describing • star map reading

> **Note**
>
> *It is best to do the Constellations Tonight program (PASS Vol. 5) with your class before doing this lesson.*

Preparation & Procedure

- Set up the STARLAB dome and projector. Place the African Mythology Cylinder on the cylinder platform, and position latitude at 0°. Adjust the time for 9 p.m. at the end of March (this is about the same as 8 p.m. in mid-April; 10 p.m. in mid-March; 11 p.m. at end of February). As students walk in, the stars should be up and African music should be playing softly.
- When all students are seated, tell them:

As is the case for many other cultures throughout the world, people of Southern Africa have been keen observers of the skies throughout their histories. Their myths and traditions concerning the sky often reflect an understanding that mixes practical knowledge, wisdom, and spiritual elements, to help remind people of a cosmic balance that regulates all things.

Natural elements of Africa, such as its many unique varieties of animals and vegetation, play an extremely important role in the lives of the people of Africa. It is not surprising therefore that particular stars and star patterns are often associated with these natural elements.

To help you find numerous animals as well as other important objects in the sky, I will hand out what are known as star maps to each one of you.

Optional

Turn on reading lights.

Procedure

Hand out star maps.

First we will all use our star maps together to find Isilimela, the digging stars, then you will use them on your own to find other constellations.

- Review with students how to use the star maps.
- Ask questions to make sure they know that the black circle that forms the edge of your map represents the horizon; that the sky is represented by everything inside of this circle; that the very center of the circle represents the zenith; that larger dots on the map correspond to bright stars in the sky.
- Have the students locate Isilimela on their maps.

Ask: "What direction is it found in?" (West.)

To find Isilimela in the sky, turn your map so that the western horizon appears at the bottom of the page. Now face that direction, and look close to the horizon. Match the pattern of dots on your map that corresponds to Isilimela with stars in the sky.

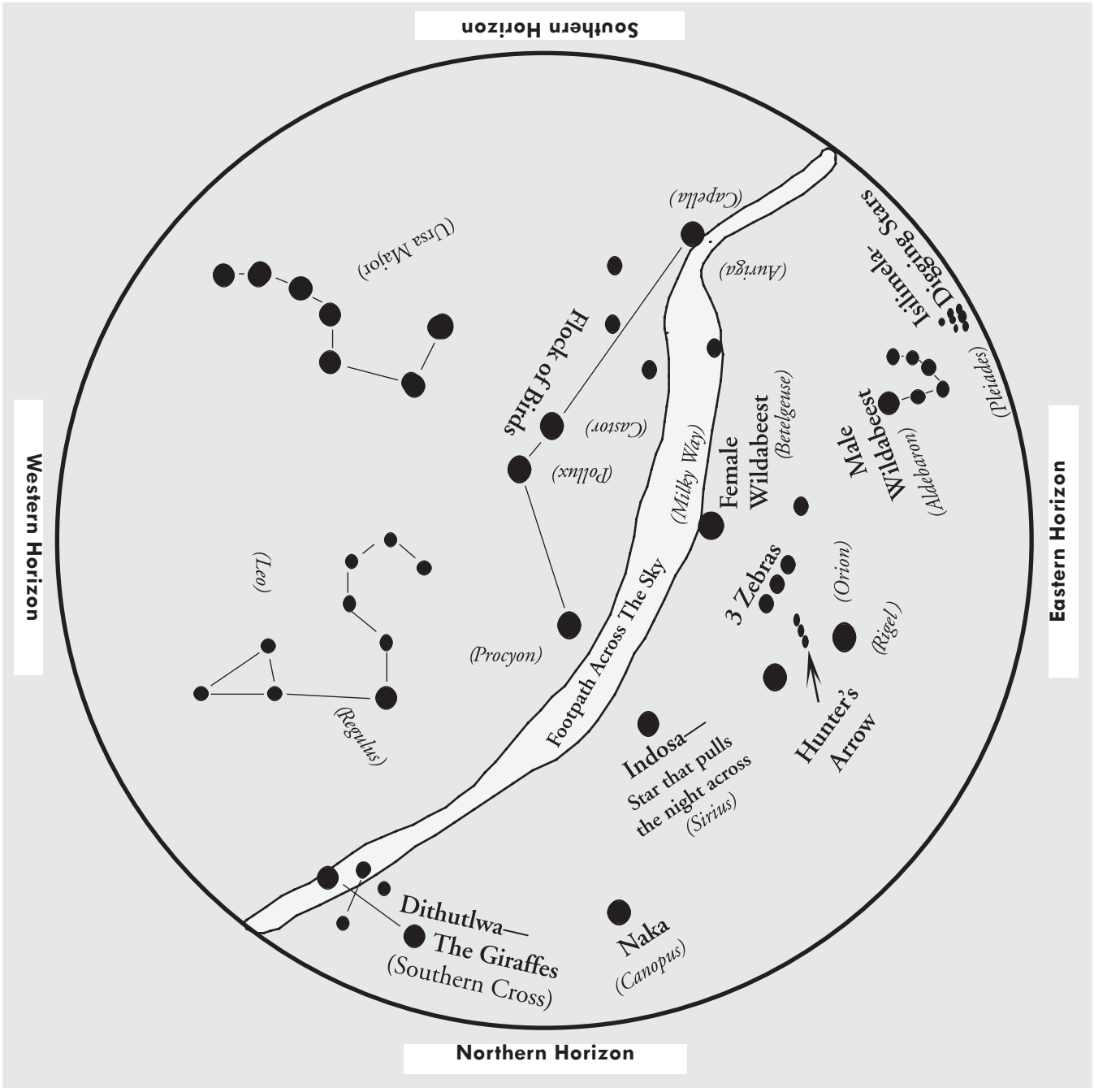
- Ask a volunteer to point out Isilimela. Now that they are familiar with the use of the star maps, help the students to form small groups, and assign a constellation for each to find. Here is a possible assignment scheme, based on which constellations are easiest to view from which part of the planetarium:

For students located in:	**Find the Constellation:**
North	Indosa (Star that Pulls the Night Across)
Northeast	Hunter's Arrow
East	Three Zebras
Southeast	Male Wildebeest; Isilimela
South	Female Wildebeest
Southwest	Flock of Birds
West	Dithutlwa (Giraffes — Southern Cross)
Northwest	Naka (Canopus); and/or Leo

- Allow ample time for each group to find their assigned constellations. Help as needed. Have each group show the constellation that they have found.
- Go on to the activity "What Does Your Village Call It?" for background information, stories, and other information about the meaning of the constellations.

Star Map of African Constellations

(For 9 p.m. at the end of March; 8 p.m. in mid-April; 10 p.m. in mid-March; 11 p.m. at the end of February)



To use this map

Turn the map so that the horizon you are facing appears at the bottom of the page. Then match the pattern of dots you see on the map with constellations in the sky.

What Does Your Village Call It?

Objective

To help develop an appreciation for the diversity of cultures in Africa and to observe how each one views the stars in its own way.

Skills

Cooperative learning • observing • listening • describing

Preparation

Set up STARLAB dome and projector. Place the African Mythology Cylinder on the cylinder platform, and set latitude for 0°. Adjust the time for 7 p.m. at the end of March (a couple of hours BEFORE it was set for the African Constellations Star Map lesson). Remove sun cover that will make the sun appear fairly low in the west. As students walk in, "daylight" should be up and African music should be playing softly.

> **Please note**
>
> *There are two parts to this activity. In Part A, the class is divided into 6 groups and in Part B, the class is divided into 11 groups. Optional: have extras of each of the African Sky Image Cards and African Sky Story Cards so that each student in the group may have his or her own card. If you opt for this, all students in any one group should have the same card.*

Be sure to familiarize yourself with the constellations and stars mentioned in the African Sky Story Cards and the African Sky Image Cards.

Procedure

Tell the students:

For the people of Southern Africa, myths and traditions about the sky mix practical knowledge, wisdom, and spiritual elements, to help remind them of a cosmic balance that regulates all things. This important balance is believed to exist in the relationship between the Earth and the sky as well. For instance: many early Southern African groups believed that the sky was a solid, expansive dome made of blue rock that covered the Earth.

Point out the sun and switch on diurnal motion.

The sun, moon, and stars were believed to be attached to the inside of the blue dome, yet free to move along its surface from east to west.

As the sun sets, brighten the stars and fade out daylight.

In many cases where stars in particular are concerned, Southern African people interpret the brighter individuals as well as bright patterns to represent familiar animals. Other stars represent important tools, vegetation, or are used to establish calendars for agricultural activities, ceremonies, and key cultural events.

MATERIALS

For the class

- STARLAB Portable Planetarium
- African Mythology Cylinder
- arrow pointer(s)
- audiotape player/recorder
- audiotape of African music
- a set of 6 African Sky Story Cards (see masters, pages 22,23)
- a set of 11 African Sky Image Cards (see master, pages 24-27)

Optional

- extra red reading lights (see PASS Vol. 4, A *Manual for Using Portable Planetariums*)
- 5-6 extras of each of the African Sky Story Cards and 3-4 extras of each of the African Sky Image Cards.

Part A: African Sky Stories

Inform the class that they will be forming groups that will represent different groups of African peoples. The names of the groups are:

- Zulu
- Ju/Wasi
- Lobedu
- San
- Tswana
- Egyptian
- Xhosa
- Khoikhoi
- Venda
- Sotho
- Xu
- Bushmen

Hand out a different African Sky Story Card to each group. Have each group share the contents of their card with the whole class by having each person in the group take a turn reading a line from the card. Ask students if they can use the arrow pointer to point out the things in the sky that the cards refer to. Switch from Starfield Cylinder to African Mythology Cylinder as needed.

Part B: Comparing Sky Images

Procedure

- Hand out Sky Image Cards: a different one to each of the groups. Inform the class that the name of the group they are representing is printed at the top of the card. Ask the students to look on their cards to see what sky objects are listed in brackets and inform them that when that particular sky object is pointed out, they will be called upon to read what the image is for their group. One by one, point out the following:

  Milky Way

  Orion

  Sirius in Canis Major (the three pointer stars of Orion point towards Sirius to the left of Orion)

  Pleiades and Taurus

  Southen Cross

  Canopus (directly south of Sirius)

  Procyon (in the Little Dog)

  Gemini (Castor and Pollux)

- For each item, have the groups that have that item on their cards take turns saying what the Sky Image represents to them. Have them say what group they represent first.

African Sky Story Card

We represent the Zulu and Xhosa people.

Isilimela is a group of stars we call the digging stars. These same stars are sometimes marked on star charts as the Pleiades. By watching the annual cycle of these stars in the night sky, we have developed a means by which we can keep a 0calendar of important seasonal events. Many other groups of people from Eastern, Central, as well as Southern Africa use Isilimela for this purpose, but they call it by different names.

African Sky Story Card

We represent the Ju/Wasi and Khoikhoi people.

The three stars that are often referred to on star maps as Orion's Belt, we call "the three zebras." A story is sometimes told amongst our people describing a hunter with only one arrow who was sent out to hunt in the skies by his wife. He spotted three zebras, a male in the center flanked by two females. The hunter decided to try shooting them. He quietly crept upon the animals and shot his arrow. But he was not close enough to hit them, so his arrow fell short. All three zebras escaped onto the Earth, as can be seen when they set in the west. The stars of the Hunter's Arrow are the same as the stars of the sword of Orion that hangs from Orion's belt.

African Sky Story Card

We represent the San people.

The Male Wildebeest is often marked as Taurus on star maps. The wildebeest is a large, swift-footed antelope with ringed horns. The Female Wildebeest is the reddish-colored star that is often marked as the star Betelgeuse in the constellation Orion on star maps.

African Sky Story Card

We represent the Sotho and Tswana people.

A flock of birds is seen chasing other stars among a collection of bright stars. The "Flock of Birds" stars are some of the brightest stars in three different constellations often found on star maps: Capella, the brightest star in Auriga; Castor and Pollux, the brightest stars in Gemini; and Procyon, the brightest star in Canis Minor, the little dog.

African Sky Story Card

We represent the Egyptian people.

Our Lord of Everything, Osiris, is not on your African star map, but is often marked as Orion on other star maps. When a pharaoh dies, his soul is judged by Osiris. A good life is rewarded by restful peace in the west, where stars seem to set at the end of their journey across the sky. A bad life is punished by sending the spirit eternally about the North Star with the other beasts.
Our goddess, Isis, is companion to Osiris, and is often marked as Sirius on star maps. When Isis rises in the east just before the sunrise, it means the waters of the Nile are about to rise and flooding will follow. This marks the beginning of our year.

African Sky Story Card

We represent Bushmen.

The milky way was created when a girl threw wood ashes from a campfire into the sky to help a lost hunter find his way back to camp. She later created some of the brighter stars by throwing up roots. White stars are ready to eat, but red stars are old roots which we all know are inedible.

African Sky Image Card

Xhosa

[Milky Way]
This is Um-nyele, "the raised bristles along the back of the sky."

African Sky Image Card

Zulu

[Sirius in Canis Major.]
This is "The star that draws the dawn."

[Southern Cross]
This is the "Tree of Life," which guides wanderers and indicates the points of the compass at night.

African Sky Image Card

Ju/Wasi and Khoikhoi

[Orion]
The three stars in a row are the three zebras.

[Pleiades]
These are the "Rain Stars."

African Sky Image Card

Lobedu and Venda

[Canopus]
This bright star is Naka whose rising marks the beginning of Southern African winter.

African Sky Image Card

San

[Taurus]
This is the Male Wildebeest, a large, swift-footed antelope with ringed horns.

[Orion]
The reddish colored star is the Female Wildebeest [Betelgeuse].

[Milky Way]
This is a road or footpath across the sky.

African Sky Image Card

Sotho and Tswana

[Southern Cross]
This is Dithutlwa, the giraffes — the brighter two stars are male giraffes, and the dimmer two are females.

[Sirius in Canis Major]
This is the really bright star Indosa which is "the star that pulls the night across."

African Sky Image Card

Xu

[Milky Way]
This is "the sky's spine" or "God's back."

African Sky Image Card

Egyptian

[Orion]
This is Osiris, Our Lord of Everything.

[Sirius in Canis Major]
This is Isis, companion to Osiris.

African Sky Image Card

Kalahari Desert Bushmen

[Taurus]
This is the hartebeest.

[Procyon in Canis Minor, the little dog]
These are grazing elands.

[Castor and Pollux in Gemini]
These are grazing elands.

African Sky Image Card

Masai of East Africa

[Pleiades]
This is a herd of cattle seen during rainy season.

African Sky Image Card

Basotho Bushmen

[Southern Cross]
This is the giraffe.

Curriculum References for African Skies

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