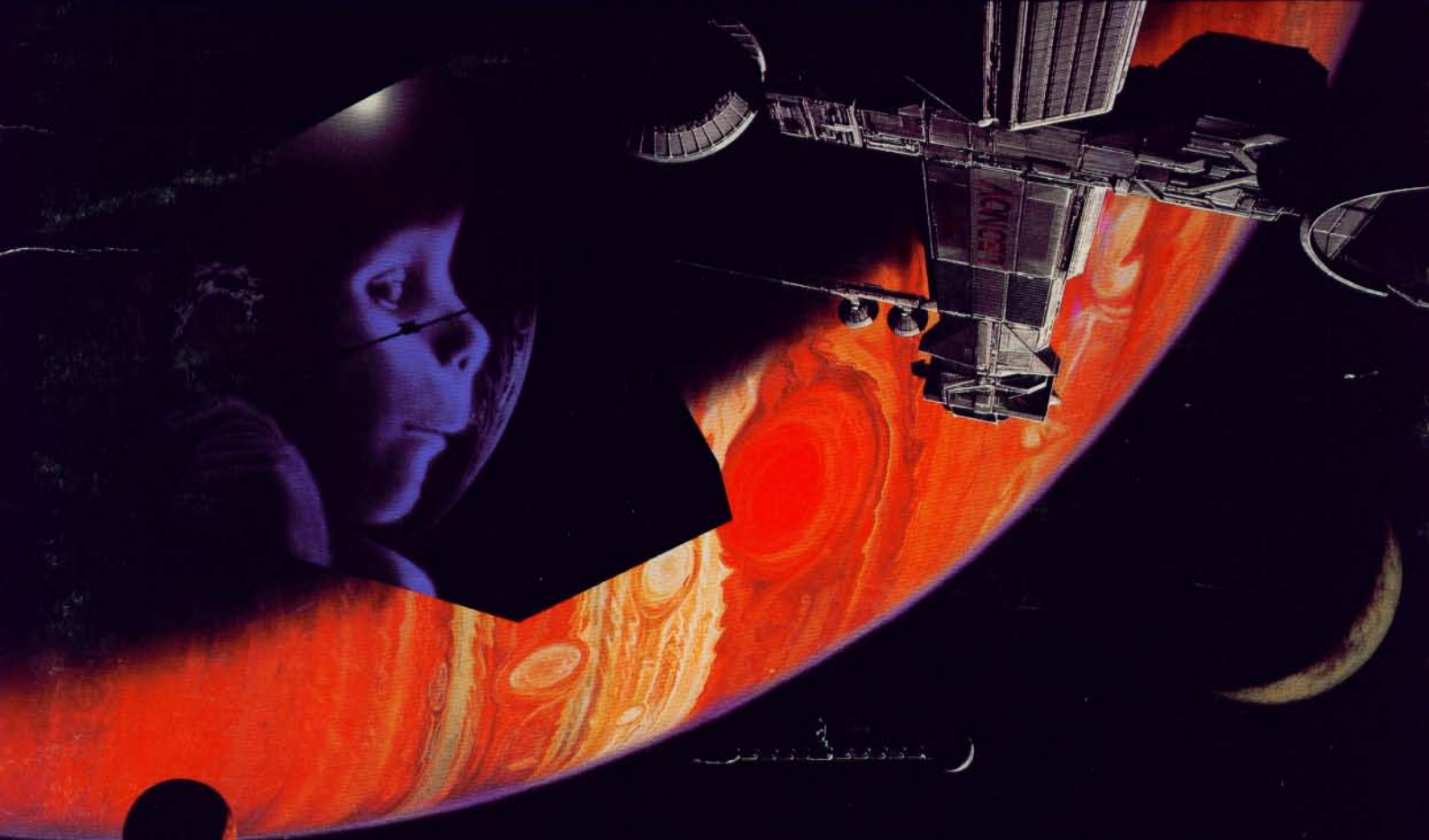


2010

ODYSSEY TWO ADVENTURE



In 2001, the Discovery mission to Jupiter ended in disaster. Now, 9 years later, you must recover the Discovery and solve the mysteries behind the monolith.

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2010

ODYSSEY TWO ADVENTURE

BY BRUCE NESMITH AND CURTIS SMITH

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See the spectacular motion picture 2010,
to be released by MGM/UA nationwide at Christmas 1984.

INTRODUCTION

This module is written for the game referee. If you plan to participate as a player, don't read any further.

THE RULES

This adventure is based on the movie 2010, and takes place in our own solar system and universe. If you put this adventure in your STAR FRONTIERS® universe, the adventure takes place before humans contact any alien race.

You must be familiar with the Alpha Dawn Expanded Game Rules and the Knight Hawks Campaign Book to play this adventure. Read and study the whole module before playing.

This module is divided into chapters. When you finish a chapter, continue with the following chapter; the text explains other options where they are needed.

Several new character skills are described on p. 15.

THE CHARACTERS

This adventure is designed for three player characters: Dr. Heywood Floyd, Dr. Walter Curnow, and Dr. Chandra. Their skills are essential to successfully complete the mission. Their abilities and skills are described on character cards. Tear out pages 17 and 18 and cut on the white lines to separate the page into three cards. Give each player his character's card.

Also pull out pages 15 and 16. The non-player characters are described there for you. Use the non-player characters to create a realistic and serious atmosphere, as well as to develop the plot. All of the non-player characters are intelligent and skilled Russian cosmonauts.

All the Russians, except Dr. Yakunina, speak English. However, they have strong Russian accents. At the beginning of their voyage, the Russians and Americans communicate with some difficulty and are slightly suspicious of each other, though always polite. As time passes, the Russians' English improves, and the Americans learn some Russian. The two groups should communicate easier and become more comfortable with each other.

Remember: aboard the Russian ship, Leonov, the Americans are guests and Colonel Kirbuk is always in command.

THE MAPS AND SHIP ROSTERS

This module includes a large map sheet with maps of two spaceships, the Leonov and the Discovery. The Leonov's ship roster is in chapter 1. The Discovery's ship roster is in chapter 3. After the characters board the Leonov in chapter 1, let the players refer to the maps and rosters as often as they wish.

A map of the Jupiter System is on the inside cover. Chapter 1 explains how to use this map.

SHIP MOVEMENT

In 2010, interstellar travel and jumps through the void are not possible. All spaceflight in this adventure takes place around Jupiter and some of its moons. Before a ship can move, its navigator must successfully plot a course for it (see New Skills). The Leonov can move into any adjacent hex on map 8 every 6 hours. After the Discovery is repaired in chapter 3, it, too, can move into any adjacent hex every 6 hours. The text explains when and how the ships can move faster.

Any ship that enters Jupiter's hex is destroyed.

FORMAT AND ABBREVIATIONS

Sections of text are enclosed in boxes; they are descriptions of action, places, and things the PCs encounter. Read boxed text aloud to the players. You can also refer back to boxed text for descriptions and information later.

References to the ships are often made using naval terms. "Forward" is toward the front, or bow, of a ship. "Aft" is toward the rear, or stern, of a ship. To a character on a ship facing forward, "port" is on the left, and "starboard" is on the right.

Several abbreviations are used in this module. Most occur in the character descriptions. The abbreviations are defined below.

ABBREVIATIONS	
PC	= Player Character
NPC	= Non-Player Character
d10	= Ten-sided die
STR	= Strength
STA	= Stamina
DEX	= Dexterity
RS	= Reaction Speed
INT	= Intuition
LOG	= Logic
PER	= Personality
LDR	= Leadership
IM	= Initiative Modifier

CHAPTER 1: LEONOV

SHIP'S NAME:	Leonov	PROGRAMS	LEVEL
OWNER:	USSR	Analysis	4
CAPTAIN ABOARD:	Colonel Tanya Kirbuk	Communication	4
AGE:	2 Years	Computer Security	2
HULL SIZE:	4	Damage Control	3
TYPE OF ENGINES:	A - Ion (uses atomic reactor)	Information Storage	5
NO. OF ENGINES:	3	Life Support	1
FUEL CARRIED:	Methane	Maintenance	1
LAST OVERHAUL:	A.D. 2008	COMMUNICATION EQUIPMENT	
LAST MAINTENANCE:	A.D. 2008	Videocom, Intercom, Radar, Energy Sensors, Portholes, Cameras, White Noise Broadcaster	
LIFE SUPPORT CAPACITY		ADF:	*See "Ship Movement" in the Introduction
MAIN:	13 crewmen	MR:	*See "Ship Movement" in the Introduction
BACK-UP:	8 crewmen	DCR:	32
PASSENGER ACCOMMODATIONS		HULL POINTS:	20
FIRST CLASS:	none	WEAPONS:	none
JOURNEY CLASS:	11	DEFENSES:	none
HIBERNACULA:	6	OTHER EQUIPMENT	
COMPUTER LEVEL:	4 (a network of 17 level 1 computers)	Telescopes, Doppler Scanner, Electrochart, 3 Work Pods, Acceleration Gauges, 2 Remote Probes	

2. Reactivate the Discovery and bring it back to Earth.
3. Investigate the nature and purpose of the alien artifact called "the monolith."
4. Survey and explore Jupiter and its moons.

1.1 BRIEFING

In A.D. 2001 the United States of America found a 3.4-meter-high monolith on the moon. The monolith had obviously been produced by alien technology and placed on the moon for mankind to discover. When sunlight struck its surface, the monolith sent a mysterious radio signal to Jupiter.

The United States immediately launched the spaceship Discovery toward Jupiter to find out who (or what) received the radio signal. The Discovery carried the most advanced computer ever built, called HAL. During the trip, however, HAL went insane and killed everyone on board but the captain before finally being shut down.

When David Bowman, the captain of the Discovery, arrived at Jupiter, he found a huge, 2-kilometer-long monolith in orbit around Io, one of Jupiter's moons. Except for its size, the monolith was identical to the one on the moon

(boxed text continues)

near Earth.

Bowman used a work pod to explore the mysterious monolith. His last transmission before disappearing forever was, "My God, it's full of stars!"

A few years later, the United States began to build another ship, the Discovery II. Its mission was to be to travel to Jupiter and find out what happened to the Discovery and its crew and explore the monolith. The Discovery II is still several years from completion.

However, the Russians have completed their own spaceship, the Leonov. The Russians are sending the Leonov to Jupiter to explore the monolith.

The United States government has asked each of you to accompany the Russian spaceship to Jupiter. Your mission objectives, in order, are:

1. Rendezvous with the Discovery and retrieve any data in HAL's memory banks.

(boxed text continues)

1.2 THE SPACESHIP LEONOV

BOARDING THE LEONOV

The trip to Space Station Five was uneventful. You were delayed for a few minutes, but now a shuttle is taking you to the UNCOS Leonov. As you draw closer to the Soviet ship, you notice that it is smaller than the Discovery, but more complex.

An hour later, the shuttle docks with the Leonov via a large clamp that juts out from near the front of the Leonov.

Captain Tanya Kirbuk meets the PCs as they board the ship. She tells them that she will give them a brief tour of the ship. The rest of this section describes the Leonov through Tanya's tour. Use Map 1 to help describe the ship to the players. During the tour, Tanya and the other Soviet crewmen answer any questions about the ship that the PCs ask. All of the Soviets who speak English have noticeable Russian accents. After the tour, the Americans will be placed in suspended animation in hibernacula for the 2-year voyage to Jupiter.

Tanya leads the PCs from the air lock hatch to the flight deck in the nose of the ship.

FLIGHT DECK

There is no gravity here. Tanya, the PCs, and the crewmen who work here all wear shoes that cling to the floor.

Dials, knobs, buttons, switches, and indicator lights cover the walls and ceiling of this cramped room. Monitors and TV screens are scattered along the walls. At the forward end of the deck are two large seats that face a small window, which looks out into space.

Tanya calmly explains the deck to you as she walks you through. "The console in the middle of the room is the navigation console. To the starboard are the communication and guidance systems. The two large chairs, of course, are for the pilot and copilot.

"We can control and monitor all interior ship functions from here, including the life support, the engines, and the heat shield. We also have several direct links from this deck to our computer network, as well as a back-up computer for emergencies. We control and monitor the radar, radio, range finders, doppler scanner, and energy sensors from this deck."

Two men are on the deck when the PCs enter. They are Uri Svetlanov and Dr. Alexander Kovalev. After describing the deck, Tanya introduces the men to the PCs and asks each to say something about himself (use the NPC descriptions on your pull-out page for details about these men).

From the flight deck, Tanya leads the PCs to the pod bay.

POD BAY

"As you can feel, there is no gravity here either," Tanya begins. "To your right are our three work pods. Along the side are two remote control probes. The clamp mechanism is in back, but you can't see it from here. The clamp allows us to dock with any ship or space station.

"All pods, probes, and space walks are launched from this bay. Any repairs we have to make on pods and probes are made here as well. We keep all of the tools in those." Tanya points to rows of lockers along the bay walls.

Tanya leads the PCs through the hatch, into the passageway, and into the recreation room.

GALLEY/RECREATION ROOM

For the first time since boarding, you feel the pull of gravity. "This is our recreation room," Tanya says. "I hope some of you play chess; it's been so long since we had any real competition. We have other games here, but chess is our favorite. There are viewing areas for tapes, too—we have a large library of videotapes. We also have a selection of books.

"On the right is our galley. All of our food, such as it is, is cooked here. Well, actually, it's heated and rehydrated in microwaves, but we feel better calling it cooking. I'll show you the ward room now."

WARD ROOM

Four doorways lead out of this area, making it seem more like an intersection than a room. "This is our main conference area," Tanya tells you. "When we have meetings that require the whole crew to be present, we have them here. Most of the crew eat their meals at this table."

Tanya points to a Y-shaped table in the center of the room. A bank of TV monitors hangs from the ceiling above the table. "The entire ship can be monitored from this room," she explains.

Seated at the table is Dr. Maxim Brailovsky. After Tanya introduces him to the Americans, Max tells them a little about himself. Tanya then leads the PCs into the sleeping bay.

SLEEPING BAY

A long, curving line of sleeping chambers lines the walls here. Each chamber is 3 meters wide and lined with padding. Equipment for recording and viewing videotapes is in each chamber. The bay has one bathroom and shower.

Tanya leads the Americans back into the ward room. Dr. Irina Yakunina has joined Max there. Tanya introduces the Americans to her in Russian. Tanya then explains that Irina doesn't speak English. Tanya turns to lead the PCs to the computer bay.

COMPUTER BAY

Dozens of monitors and a long row of consoles crowd this room. A large column rises from the floor to the ceiling in the back of the bay. "This, obviously, is the ship's computer bay," Tanya says. "From here, all of the ship's computational needs are met. The terminals in the ward room and flight deck connect back to this area."

Dr. Mikolai Ternovsky and Dr. Vasili Orlov are in this room. Tanya introduces these men to the Americans. Vasili offers to show the Americans around the computer bay.

"Unlike the Discovery," Vasili tells you, "the Leonov doesn't have one large computer. Instead we have many smaller computers that are linked together in a network. In an emergency, we could perform all of the functions of the flight deck from here in the computer bay, but that would not be easy.

"We control all of the ship's scientific equipment from here, as well as a good deal of the ship's other instruments. We also control and monitor our remote probes from here. Why, we even have a miniature electronics laboratory."

Tanya thanks Vasili and leads the PCs back into the ward room. From there, she takes them to the medical bay.

MEDICAL BAY

In the center of the medical bay is another room. Each wall of the inner room has a large window in it. The area around the inner room contains beds, desks, and all sorts of medical equipment.

Surgeon Commander Rudenko is working here, checking the hibernacula. Tanya introduces him and asks him to show the Americans around the medical bay.

"This area," Rudenko begins proudly, "is a complete space medical facility. We can do everything from physical therapy to open heart surgery here. The diagnostic labs are superb. We have a

(boxed text continues)

complete supply of drugs and blood. We even have all of your blood types.

"This room," Rudenko says, pointing to the room in the center of the bay, "is your home for the next 2 years. These are your hibernacula!"

Tanya tells the Americans that Dr. Rudenko will wake them when the Leonov reaches Jupiter. She says goodbye to them and leaves them with Rudenko.

The Americans must put on special jumpsuits. Dr. Rudenko attaches several leads and meters to each suit, then asks the Americans to lie down in their hibernacula.

Dr. Rudenko injects a preserving fluid into each American before closing and sealing their hibernacula lids. A few minutes later, each PC's heartbeat and breath rate slow to the point where only a machine can detect them.

1.3 APPROACHING JUPITER

The Leonov's long voyage to the Jupiter system is uneventful. However, just after entering the system, Vasili detects strange

readings from Europa, one of Jupiter's moons. To determine what Vasili detects, roll 1d10 and consult Table 5 below. (Tables 1-4 are on Map 8.)

TABLE 5. EUROPA READINGS

DIE ROLL	READING
1-3	Magnetic field similar to the field of the monolith found on the Earth's moon.
4-6	Radio signal broadcasting an organized but indecipherable message.
7-0	Traces of chlorophyll on the moon's surface. (Chlorophyll is found only in living things.)

Nearly 2 years after boarding the Leonov, the Americans are slowly brought out of hibernation. When they come to, they are very stiff and very hungry. Though 2 years have passed, the Americans have only aged 2 weeks.

After the PCs have a chance to eat, Tanya calls a meeting to discuss with them the

strange readings that Vasili detected from Europa. The characters cannot determine any more about Europa from the Leonov. If they want more information, they must send a remote probe or a manned expedition of modified work pods to Europa.

Place a ship counter for the Leonov from your KNIGHT HAWKS game on the hex marked "A" on Map 8. Place planet counters on the round starting positions for Europa and Io.

The Leonov is hurtling toward Jupiter at more than 80,000 kilometers per hour. Begin moving the Leonov one hex each hour along the red dotted line on the map. The Leonov cannot change course until after it slows down by aerobraking (see Chapter 2). Move the moons around Jupiter according to Table 4.

They can launch a remote probe when the Leonov passes near Europa (the Leonov and Europa pass through hex "B" at the same time). However, the Leonov is traveling so fast that it cannot launch a manned expedition until after it reaches Io at the end of the aerobrake maneuver.

If the crew launches a remote probe to investigate Europa, go to chapter 10 before continuing with chapter 2.



Sealed in a hibernaculum aboard the Leonov, Dr. Heywood Floyd falls into a deep sleep for the 2-year-long voyage to Jupiter. Dr. Petri Rudenko controls and monitors the hibernation process.

CHAPTER 2: AEROBRAKE

2.1 EXPLAINING THE AEROBRAKE

The Leonov is speeding toward Jupiter, following the dotted red line on Map 8. The ship is moving 1 hex each hour. Start running this chapter when the Leonov enters hex "C." The Leonov is about to try an aerobrake maneuver. Tanya calls the crew to the ward room for briefing.

Vasili turns to the crew and says, "The Leonov is going to make history in 6 hours. We are moving at 20 kilometers a second right now; for the Americans, that's almost 50,000 miles an hour. We must slow down a great deal before we can establish an orbit around Io, where the Discovery and the monolith are. If we use our engines to slow us, we may burn up too much of our fuel. We have another way to slow down: aerobraking. "The Leonov is equipped with a heat shield that opens to cover the rear of the ship. We will turn the ship around so it is traveling backwards. Then we'll skim through the outer layers of Jupiter's atmosphere. Friction of the air will slow the Leonov. After we leave Jupiter's atmosphere, we will rendezvous with Io. "Of course, no one has ever attempted aerobraking before. There is much we don't know, and there is some danger. If our course is not absolutely correct, we could fly too deep into Jupiter's atmosphere and burn up!"

Tanya explains that if the Leonov remains on its present course, the ship will enter Jupiter's atmosphere between two of its colored bands (orange and yellow). Mission control has been unable to provide any solid information about the bands.

During the next 4 hours, the Leonov can alter its course once, to enter either the yellow or orange band. Tanya orders the crew to begin work immediately to find the safest course for the Leonov's entry into Jupiter's atmosphere. After 4 hours, they cannot alter the ship's course.

2.2 CONDUCTING TESTS

Each American can conduct tests in his area of expertise for information about Jupiter's atmosphere bands. The Russians can also conduct tests, if you want them to.

All of the possible information the characters can gain about the bands is listed below. Characters use their skills to learn this information. The skill needed for each test is written in parentheses after the test. Each test requires 1/2 hour.

For example, if a PC tests to see if there is a problem with radiation, he makes an astronomy calculation. If the check succeeds, the PC learns what is given in the Radiation listing below. If he or another character follows up on the initial test and makes a successful stress analysis, the character learns what is given in the "Follow-up" for that listing.

TURBULENCE (analyzing samples or calculate): The yellow band has more storms and is rougher than the orange. The area between the two bands is full of severe storms.

Follow-up (stress analysis): The rougher parts of the atmosphere are more dangerous to the Leonov.

ACID (analyzing samples or calculate): The orange band has a much higher concentration of acid than the yellow. The acid could eat away the heat shield.

Follow-up (analyzing samples): The heat shield will be red hot when the Leonov is in Jupiter's atmosphere. Any acid that touches it will be burned off before it can cause any damage.

MAGNETIC DISTURBANCES (analyzing samples or calculate): The orange band has a stronger magnetic field than the yellow. Some of the ship's instruments won't work in a strong magnetic field.

Follow-up (operating machinery): The instruments that are affected by magnetic fields are not vital for running the ship. Most vital equipment works properly in magnetic fields.

HEAT (analyzing samples or calculate): The yellow band is closer to the equator and is not as cold. The orange band is extremely cold. The turbulent area between the two bands is an intermediate temperature.

Follow-up (calculate or operating computers): Because the Leonov will be hot from the friction of its passage through the atmosphere, the cold is irrelevant.

RADIATION (analyzing samples or calculate): The orange band has a higher level of radiation than the yellow. Some of the radiation would penetrate the hull of the Leonov.

Follow-up (stress analysis or operating computers): The heat shield provides extra protection from radiation. The radiation would pose no danger.

EXPLOSIVE GASES (analyzing samples or calculate): The orange band contains pockets of pure methane. The Leonov's heat could make these pockets explode.

Follow-up (stress analysis or operating computers): The Leonov will travel so fast through the atmosphere that, by the time the methane gas explodes, the ship would already be out of the area.

When the crews have decided exactly where they want to enter Jupiter's atmosphere, Tanya makes the final course alteration. Then she orders the crew into flight couches or their beds for the duration of the aerobrake. However, she asks Curnow and Chandra to take positions on the flight deck to help should an emergency arise during the aerobrake. She and Uri will pilot the Leonov through Jupiter's atmosphere.

2.3 TAKING THE PLUNGE

The aerobrake maneuver takes place in hex "D" on Map 8.

The strain of decelerating has steadily increased over the last few hours. It's almost impossible to move any part of

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RIGHT. Traveling 20 kilometers per second, the Leonov skims through Jupiter's upper atmosphere. This dangerous maneuver should slow the Leonov enough to rendezvous with the Discovery.

INSET. Dr. Floyd comforts Irina Yakunina during the aerobrake.

your body. As the Leonov enters the atmosphere, the ship begins to quiver and shake. Then the Leonov vibrates furiously as Jupiter's mighty gales pound against the heat shield.

During the aerobrake maneuver, Tanya must use her pilot skill (increase maneuver rating) whenever a problem, such as turbulence, occurs. The number of problems that occur depends on where the Leonov enters the atmosphere. If it enters through the orange band, 7 problems occur. If it enters through the yellow band, 10 problems occur. If it enters between the two bands, 15 problems occur. If Tanya fails her piloting skill check, she begins to lose control of the Leonov.

Chandra and Curnow are seated before computer consoles. Through the aerobrake, the ship's external sensors constantly gather information about the atmosphere. That information and structural information about the Leonov are continuously updated and displayed for Curnow.

Whenever Tanya begins to lose control of the ship, Curnow must determine exactly what is happening to the ship. To make that determination, Curnow must roll 70 or less on d100. If Curnow is successful, he quickly tells Chandra what the problem is.

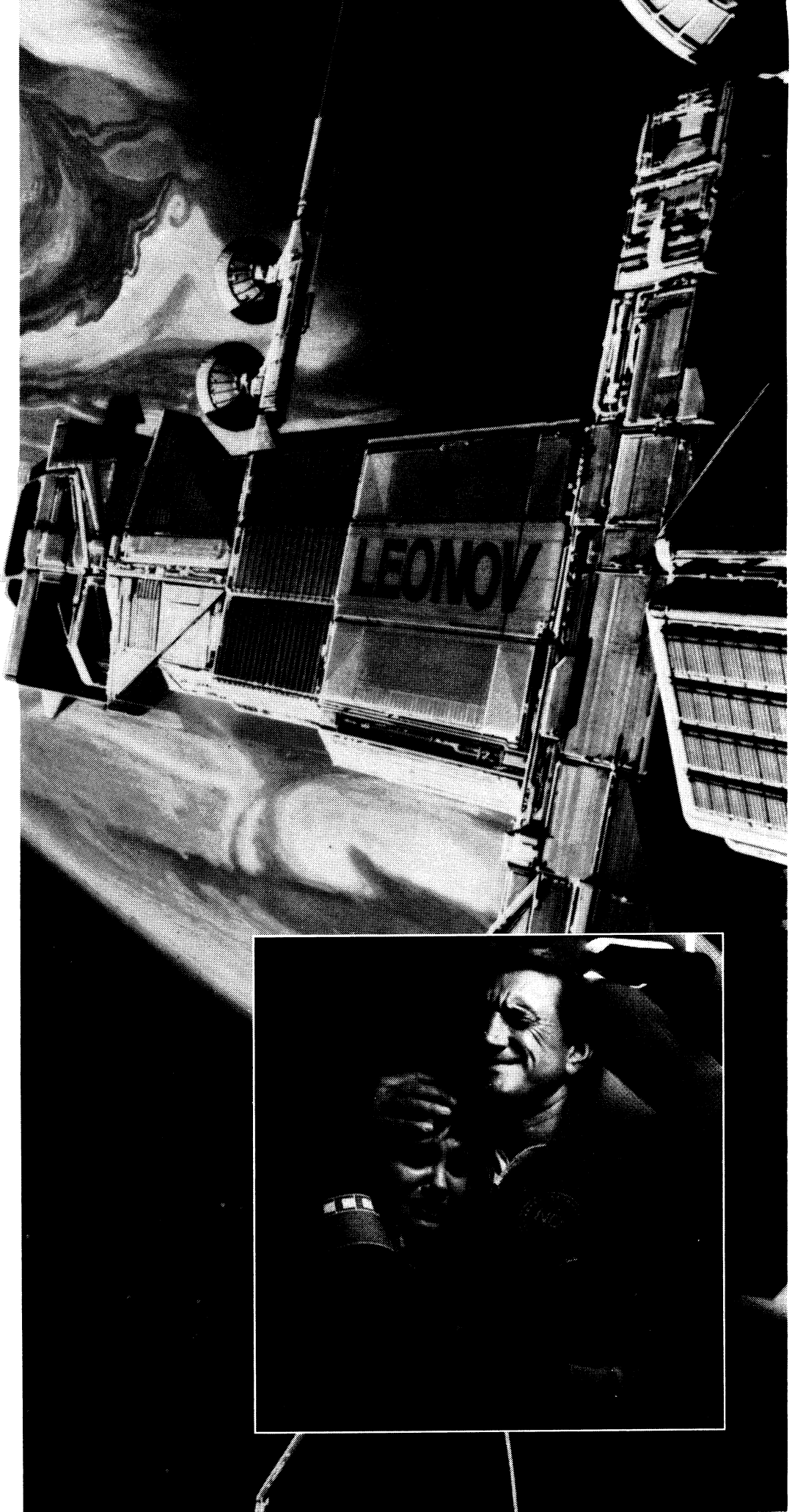
Chandra must then program the flight computer to correct the problem. Chandra must make a successful manipulating programs check for a level 4 program.

If either Curnow or Chandra fail a roll, Tanya fires the engines, burning precious fuel, to regain control. If Tanya uses the engines three or more times, so much fuel is burned that Dr. Ternovsky, the navigator, must plot a new course back to Earth. Whether the Leonov burns fuel three or more times affects how the Leonov escapes from Jupiter in chapters 7 and 8.

2.4 AFTER THE AEROBRAKE

The Leonov moves 1 hex every 3 hours after the aerobrake maneuver. The Leonov should rendezvous with Io in hex "E." When they arrive, Tanya and Uri skillfully place the Leonov in orbit around Io. From then on, the Leonov moves with the moon in its orbit around Jupiter.

If the crew decides to send a remote probe or a manned expedition to Europa now, go to chapter 10 before continuing with chapter 3.



CHAPTER 3: SALVAGE

3.1 GENERAL INFORMATION

This chapter features general information about the Discovery, including how to salvage it. Later sections in this chapter outline each deck of the ship. The last section in this chapter explains how to restart HAL, the Discovery's computer.

When you start this chapter, study it and

Maps 2-7 carefully. Also let your players study the Discovery maps. Answer any questions the players have about the normal operation of the Discovery. Be sure to explain HAL's capabilities (see HAL Awakens, 3.11 below). Do not, however, give the players any details about the Discovery's current condition if the PCs can't learn that information while on board the Leonov.

3.2 HOW TO REPAIR AND RESTART EQUIPMENT

The Americans' primary mission objective is to salvage the Discovery, which will be a complex and sometimes dangerous task.

Since Commander Bowman disconnected HAL and left the Discovery 9 years ago, the ship has been without manual or computer control. Because most of the ship's equipment required frequent maintenance or calibration, the Discovery is a wreck. Over the years, some of the ship's equipment shut down automatically; much of the equipment, however, broke down, burned out, or wore out. The PCs must make extensive repairs before the Discovery can again be fully operational.

A list of the major repair problems facing the PCs is given in the next section, 3.3. Included in the list is a description of each problem and the equipment that the PCs must restart or repair.

Restarting equipment takes 1 hour. To restart equipment, the PCs should follow these steps:

1. Test the equipment.
2. Test and turn on the equipment's circuit breaker (in area 17).
3. Make a successful operating roll. This must be done by an astronaut with the appropriate skill (technician or computer). Unless otherwise noted, all equipment is level 5.
4. Turn on power.

Repairing equipment takes 1 hour plus the time listed for repairs on p. 11 of the Expanded Game Rules. To repair equipment, the PCs should follow these steps:

1. Use the repair guidelines on p. 11 of the Expanded Game Rules. All repairs are made as though in a shop. Unless otherwise noted, all repairs are major.
2. Test the equipment.
3. Test and turn on the equipment's circuit breaker (in area 17).
4. Turn on power.

SHIP'S NAME:	Discovery	COMPUTER LEVEL:	6 (see programs below)
OWNER:	USA		
CAPTAIN ABOARD:	Dr. Heywood Floyd	PROGRAMS	The ship's computer is a HAL 9000, a self-aware, artificially intelligent machine. It is capable of writing its own programs as if it were a level 6 computer specialist. HAL can write any type of program.
AGE:	10 years	COMMUNICATION EQUIPMENT	Videocom, Intercom, Radar, Energy Sensors, Portholes, Cameras, White Noise Broadcaster
HULL SIZE:	5	ADF:	*See "Ship Movement" in the Introduction
TYPE OF ENGINES:	B - Ion (uses atomic reactor)	MR:	*See "Ship Movement" in the Introduction
NO. OF ENGINES:	3	DCR:	35 (17 without HAL)
FUEL CARRIED:	Methane	HULL POINTS:	25
LAST OVERHAUL:	A.D. 2001	WEAPONS:	none
LAST MAINTENANCE:	A.D. 2001	DEFENSES:	none
LIFE SUPPORT CAPACITY		OTHER EQUIPMENT	Telescopes, Doppler Scanner, Electrochart, 1 Work Pod (originally 3), Acceleration Gauges
MAIN:	5 crewmen		
BACK-UP:	5 crewmen		
PASSENGER ACCOMMODATIONS			
FIRST CLASS:	none		
JOURNEY CLASS:	5		
HIBERNACULA	5		

3.3 MAJOR PROBLEMS AND MANDATORY REPAIRS

RESTART THE ATOMIC ENGINE

Energy sensors on the Leonov show that the Discovery's atomic engine is not operating. Some time after Bowman left, safety devices shut down the engine because it was becoming unstable.

The astronauts must repair the engine so they can stabilize the ship and move it to a safe orbit. The engine needs a major repair.

STOP THE DISCOVERY'S TUMBLING

The Discovery's centrifuge (see Map 7) is a large, round room that spins to simulate gravity. The flywheel spins in the opposite direction to stabilize the ship.

Many years ago, the bearings around the centrifuge and flywheel froze, jarring them to a halt. As a result, the Discovery started tumbling end over end.

The PCs must stop the Discovery's tumbling before they can move the ship to a safer orbit. To stop the tumbling, the astronauts must restart the atomic engine and an engineer must make a successful damage control check in the cockpit (area 13). Without HAL running, the Discovery's DCR is only 17. It takes 1 hour to stop the tumbling. If the engineer's check fails, he can try again, once each hour.

Normally, the Discovery's sphere, except the centrifuge, has no gravity.

MOVE THE DISCOVERY OUT OF ITS DANGEROUS ORBIT

The Discovery is in a dangerous orbit around Io and will crash into that moon in $25 + 1d10$ hours, unless the PCs restart the ship's atomic engine, stop the tumbling, and move the ship to a higher, safe orbit. It takes a pilot 3 hours to fly the ship to a safe orbit.

If Floyd makes a successful prediction check, he can calculate the amount of time left before the crash to within 5 or 6 hours. If Floyd doesn't make the calculation, Vasili does so, 10 hours after the PCs board the Discovery.

REPAIR POWER GENERATORS

The Discovery is without power. Generators attached to the atomic engine normally provide electricity to all of the ship's equipment, including HAL. Those generators are burned out, however, and must be repaired. Remind the PCs that the atomic engine must be running before the generators can provide power.

Although the Discovery carries large batteries, their power dissipated over the years. (Some equipment may still have power from small batteries that are still charged.)

After the PCs board the Discovery, they can start the auxiliary power generators from the cockpit, area 13. The auxiliary generators will power all of the ship's equipment (except for the centrifuge motor) for 3 days. Power for all equipment runs through circuit breakers in area 17.

REPAIR THE LIFE SUPPORT SYSTEM

As the Discovery orbited Io, it became very hot when it was exposed to Jupiter's radiation; then became very cold when Io shielded the ship from Jupiter's rays. The strain of cooling and then heating the ship finally burned out its life support system.

As the Discovery's orbit decayed, the ship moved close enough to Io that Io shields it from Jupiter's radiation.

Without the life support system running, the Discovery is always cold: its interior temperature is a chilling -100 degrees Centigrade. Characters who don't wear their spacesuits in such cold suffer 1 point of damage every turn.

The PCs must totally repair the life support system. Without the system running, oxygen in the ship will only last 10 days. Of course, characters use this oxygen only when they aren't in their spacesuits.

After the support system burned out, food supplies in areas 18 and 19 spoiled. As a result, the air in areas 4, 5, 6, 18, 19, 20, 22, and 23 is nauseating. If the PCs do not replace the air in those areas, or if the life support system has not been running for 2 days, any PC breathing air in any of these areas loses 1 Stamina point every hour.

REPAIR HAL

Most of the Discovery's systems were designed to be controlled by the computer, HAL. The PCs must repair HAL so he can control the ship while they are in hibernation during the flight back to earth.

The PCs may also want to find out whether HAL knows anything about the monolith or what happened to Commander Bowman. See HAL Awakens, 3.11, for details about repairing HAL.

3.4 OPERATING THE DISCOVERY'S DOORS

The doors and hatches on the Discovery and the Leonov are essentially the same. Each ship has two kinds of doors: regular

and airtight. All doors open and close by sliding into and out of the wall next to the doorway.

A *regular door* has 20 structural points. It is not airtight. A latch that can be opened from either side of the door holds a regular door shut.

An *airtight door* is primarily a safety device on spaceships. An airtight door has 75 structural points. When an airtight door is shut, it automatically seals.

Normally, an airtight door opens electrically when a button on the door is pressed. Characters can switch individual airtight doors to manual. The ship's computer can control airtight doors, except those switched to manual. When there is no power to an airtight door, it must be opened and closed manually.

All airtight doors on the Discovery and Leonov have pressure locks (level 2). These locks prevent the doors from opening when the pressure on both sides of the door is different by more than 10%. Thus, a door between a pressurized room and a depressurized room cannot open until both rooms are brought to the same pressure. However, characters can override a door's pressure lock by flipping a switch on the door. Gauges on the wall next to each side of the door show the pressures on both sides of the door.

3.5 GETTING TO THE DISCOVERY

Tanya maneuvers the Leonov to within 200 meters of the Discovery. She will not move the Leonov any closer while the Discovery is tumbling. When the Leonov is in position next to the Discovery, read the following boxed text to the players.

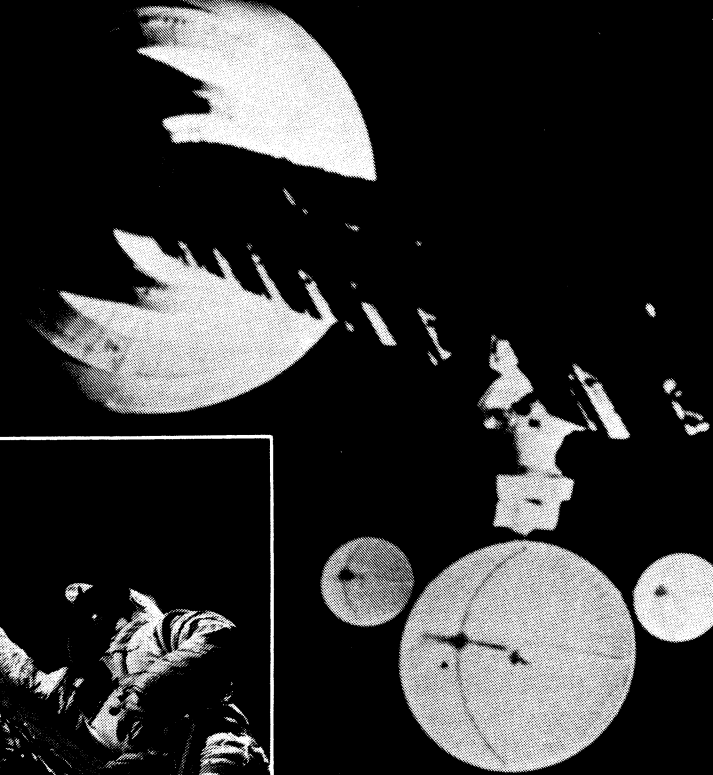
The Discovery is tumbling end over end in space. The orange light of Io shimmers behind it. The ship's windows are dark, and all of its lights are off. The Discovery looks dead—abandoned—as if it has been floating in space for eons.

Off to one side of the ship, a large rectangle of darkness hangs in space. No stars light this rectangle. It is a black monolith over 2 kilometers long!

Tanya allows any of the Americans to cross to the Discovery. She also allows the Americans to choose one of her crewmen to accompany them. Max Brailovsky is the ideal choice because he is experienced in zero-gravity work. Neither Tanya nor Irina will leave the Leonov.

RIGHT. Seven-hundred million kilometers from Earth, the lifeless spaceship Discovery tumbles through space.

BELOW. Cosmonaut Maxim Brailovsky and astronaut Walter Curnow climb across the sulfur-covered hull, trying to reach the Discovery's airlock.



The characters must use hand-held thrusters to propel themselves to the Discovery, 200 meters away. The thrusters work just like rocket packs, with one exception: one burst from a thruster only provides enough thrust to travel 10 meters per turn. (For details about rocket packs, see the Knight Hawks Campaign Book, p. 29.)

As it tumbles, the Discovery makes one revolution every minute. The only safe place to land on the Discovery is at the center of the ship's spin, which is at the large antenna.

The farther a character lands from the antenna at the center of the Discovery, the more damage he takes. For every 10 meters from the center that a character lands, he takes 1d10 points of damage. Characters must make a successful Dexterity check to grab the Discovery anywhere except at the center. If Max goes with the Americans and they do not recognize the danger of landing anywhere other than the antenna, Max warns them just after they leave.

Once the characters grab onto the Discovery, they must crawl along its surface to reach the airlock next to the pod bay (area 1). The airlock is 50 meters from the center of the ship. Every 10 meters, each character must make a Dexterity check to see if he holds onto the ship. If the characters are joined by life lines, no one can lose his grip

on the ship unless all of the characters fail their Dexterity checks at the same time.

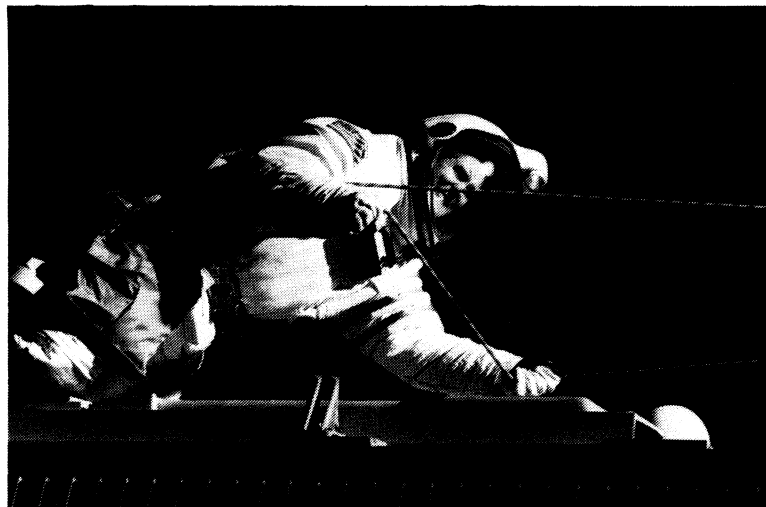
If a character loses his grip on the ship, he is flung free of the ship and travels away from it at a distance per turn equal to half his distance from the ship's center at the time he lost his grip. For example, if a character loses his grip when he is 30 meters from the ship's center, he travels away from the ship at 15 meters per turn. A character who is flung from the ship must use his thruster to get back to the ship's center.

3.6

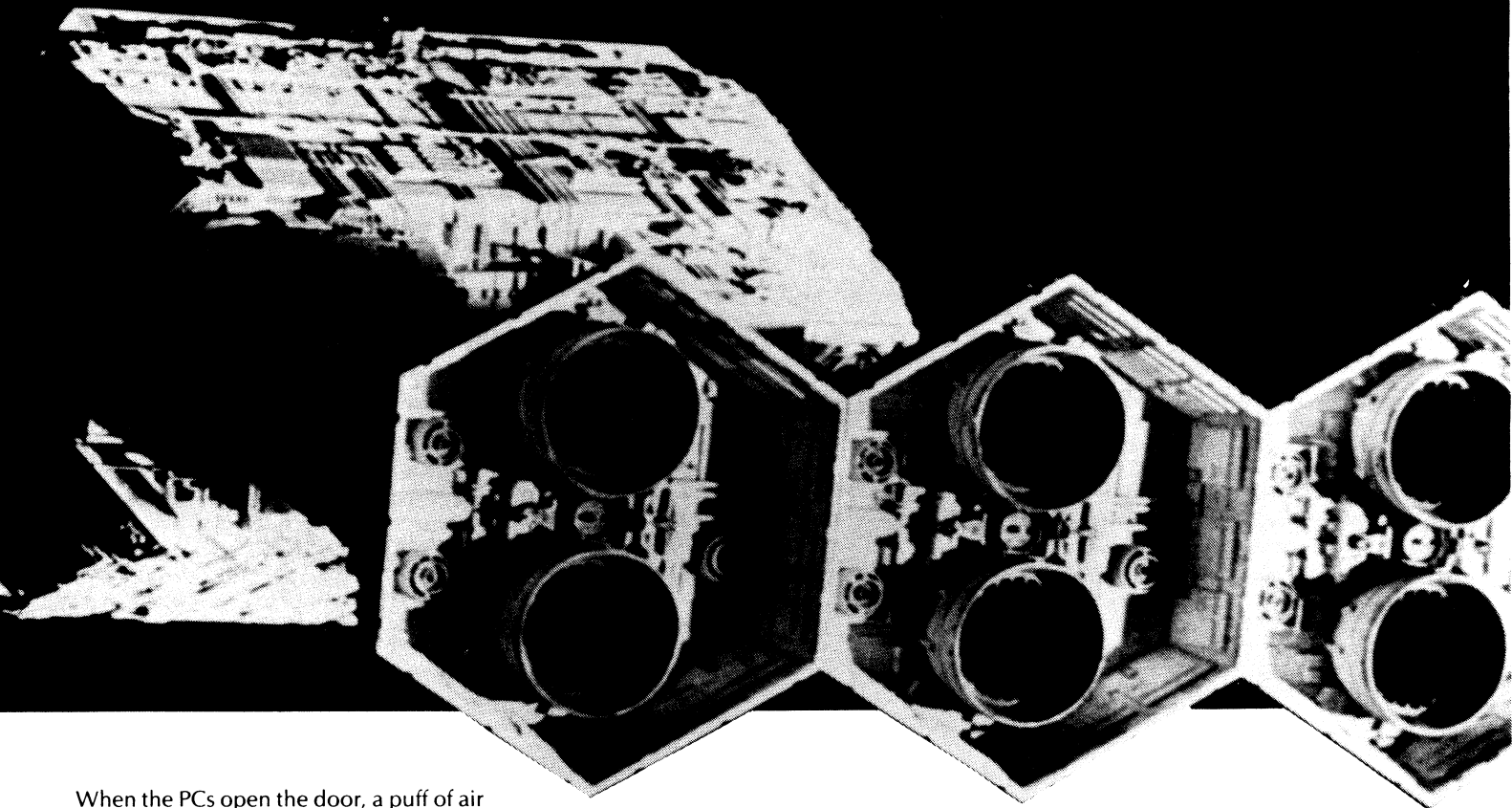
LOWER DECK (See Map 3)

1. AIRLOCK

There is no power in this airlock. The door is sealed, and the gauges show a slight pressure inside. Because there is no power, the PCs cannot pump the remaining air out; instead, they must override the pressure lock and open the door manually.



Straining to stay on the spinning Discovery, spaceship engineer Walter Curnow works his way toward the ship's sphere.



When the PCs open the door, a puff of air bursts out, covering their helmets with sulfur dust. The astronauts can wipe the dust off.

2. POD BAY

The door between the airlock and the pod bay is shut. The pod bay is depressurized. Read the following boxed text to the players after the PCs open the door.

The light from your helmets is all that illuminates this area. A layer of yellow dust covers everything, but is thickest near the center pod door. Only one workpod remains, sitting on the starboard launching platform. A spacesuit stands against the aft wall.

Bowman closed the center pod door when he left the *Discovery*, but it didn't seal properly. Because HAL was disconnected and there was no one else left on board, the pod bay was never repressurized after Bowman left.

Over the last 10 years, sulfur dust from Io worked its way through the crack between the two halves of the pod door. As characters move through the pod bay, they kick up swirling clouds of dust that fall slowly toward the pod doors. There is no dust anywhere else in the ship.

The PCs must clear the dust from the pod bay before they connect it to the ship's life support system. If they don't, the dust clogs the ship's air filters and shuts down the life support system 1d10 hours after it is restarted. PCs can replace the air filters in 30 minutes, but must do so in area 24. Once the filters are replaced, they will not clog again.

The PCs must seal the central pod door shut before they can repressurize the pod bay. That door, however, is jammed with sulfur dust. After a technician repairs the door, the PCs can repressurize the bay. Although the normal air pumps are not functioning, two large tanks against the aft wall are full of oxygen. Those tanks are normally used to fill air tanks in spacesuits and workpods, but the PCs can use them to repressurize the pod bay.

The remaining workpod's batteries, fuel tanks, and air tanks are empty. The workpod is otherwise in perfect working condition. It can carry two people; all of its other capabilities are the same as those of the Leonov's workpods.

Controls for the air pumps, launching platforms, and pod bay doors are on the console. From the console, the PCs can also

tell that no power remains in the ship's emergency batteries. The astronauts cannot gain any information about the auxiliary power generators from here.

3. PARTS & EQUIPMENT STORAGE

This room is pressurized. Cabinets and lockers cover all sides of the room. These lockers contain spare parts for all the equipment on the ship except HAL, the cockpit, and the circuit breaker room. Equipment for working on the *Discovery's* exterior is also stored here.

4. REPAIR LABORATORY

This room is pressurized. It connects directly to the access tube (area 5). Fractured testing gear lies against the curved outer wall.

This lab is used to test and repair portable equipment. It is also used to prepare samples for further analysis in the science lab (area 7). The air pumps, launching platforms, and pod bay doors can be controlled from here also.

The window casing in this area has weakened. It bursts open if it takes 10 structural points of damage, or if this room or the pod bay is explosively decompressed.

5. ACCESS TUBE

This circular tunnel connects all decks on the ship, except the centrifuge. It starts in area 4 on the pod bay deck, leads to area 6 on the central deck, then leads to area 18 on the command deck, and finally ends at area 22 on the upper deck. A ladder runs up the center of the tunnel.

An inflated spacesuit is stuck in the tube. When a character first enters the tube, the air disturbance he causes dislodges the suit and sends it floating down toward him. Because the tunnel is dark, the suit looks just like a person floating downward. The suit's legs and arms even move as they bump against the ladder rungs.

If the first character in the tube tries to get out of the suit's way, he must make a Dexterity check. If the check fails, the suit's heavy magnetic boots crash into the character, causing 1d5 points of damage.

3.7

CENTRAL DECK (See Map 4)

6. PASSAGEWAY

The access tube (area 5) opens directly into this hall. At the port end of the hall, an airtight door leads into the airlock. A regular door in the forward side of the hall leads into the science laboratory. A dull gray film of frost covers the walls, floor and ceiling.

7. SCIENCE LABORATORY

The door to this room is shut. The air pressure gauge does not work. There is air in the science laboratory.

The ceiling and walls of the laboratory are covered with cabinets. Several cabinet doors hang open. A thin film of frost covers everything, almost hiding debris on the floor. Many small objects float in the air, twinkling when light hits them.

Years ago, when the Discovery started tumbling, several cabinet doors jarred open. Glass test tubes and flasks flew out and shattered. The debris on the floor and the twinkling objects are shards of glass.

Each turn, there is a 25% chance that the glass will puncture a character's space suit, making a 2-centimeter hole. Characters who are not wearing spacesuits, have an 80% chance of taking 1 point of damage from the glass each turn.

This laboratory is used to analyze samples and instrument readings. Here, the astronauts can perform chemical and

electrical experiments. They can also construct electrical devices and prepare chemicals in this lab. (Chemicals are stored in area 21.) There is a HAL terminal here.

8. AIR LOCK

The air in the air lock is at twice normal pressure. Until the pressure is equalized, the air lock door opens only by manual over-ride. If the door is opened while the pressure is still twice normal, everybody in passageway 6 is blown into the access tube. Each affected character in a spacesuit suffers 1d10 points of damage. Characters without spacesuits take 2d10 points of damage.

Until power is restored, the air lock pumps will not work. A technician can try to let the high pressure out slowly. To do so, the technician must make a successful deactivate alarms/defenses roll (alarm level 3).

9. TOOL ROOM

The walls, ceiling, and floor are covered with tools in clamps and straps. A few tools float in the air. All the tools needed to test and repair the interior of the Discovery are stored here, covered with frost.

10. HAL LOGIC MEMORY CENTER

A sign on the airtight door to this room reads, "No Admittance Except To Authorized Personnel." The pressure gauge shows that the room has proper pressure.

There is no frost in this room. This room has its own emergency climate control equipment to make sure that the humidity remains constant. After the ship's life support system failed, the emergency equipment kept excess moisture out of the air for several years before it, too, broke down.

This room is dark. All of the red walls are covered with HAL's memory banks: rows of memory board slots. Each slot has a barely legible label above it. In several places, memory boards are disconnected, pulled halfway out of their slots.

The characters must reset HAL's circuit breakers in area 17 before they can start HAL. "Bringing up" HAL requires a lot of work. When Dr. Chandra is ready to begin, see HAL Awakens, 3.11. There is a HAL terminal here.

The astronauts cannot control ship functions from here. This room is only a repair access to HAL's memory and central processing unit.

11. PASSAGEWAY

There is a closed circular hatch in the ceiling of this room. A large fire extinguisher stands in a niche in each side wall. Conduits and cables line the walls in several places. A few severed cable ends float near the walls.

If the characters repair the broken cables before they turn on the auxiliary power generators or the power generators, nothing happens.

If the cables are not repaired, when power is turned on, a floating cable end touches one of the fire extinguishers and shorts out. The short makes the fire extinguisher explode. The explosion fills all of room 11 and part of room 9 with foam. Characters in areas 9 or 11 during the explosion take 1d10 points of damage. The explosion can be felt or heard everywhere in the ship.

After power is turned on, unrepaired cables cause 3d10 points of damage to anybody who touches one. If the cables' circuit breakers in room 17 are not shut off, characters cleaning out the foam may be shocked.

12. THE HUB

This is a circular passageway. A door at the aft end leads to the centrifuge. The hub is covered in a layer of frost. When the centrifuge is spinning, the aft part of the hub revolves with the centrifuge.

3.8

COMMAND DECK (See Map 5)

13. COCKPIT

The cockpit walls are covered with knobs and buttons, surrounded with dead indicator lights. A fuzzy view of Jupiter is visible through the frosty windows.

All of the instruments are dead. Emergency cut-off circuits activated long ago when the Discovery began to tumble. The circuit breakers in room 17 must be reset before the instruments can function.

The severe conditions of the last nine years caused several shorts in the controls. Unless major repairs are made, an electrical fire breaks out when the circuit breakers are reset. There are fire extinguishers behind each of the two flight chairs.

If water or ice (see area 16 below) get into the cockpit after the instruments are repaired, the control panels short out. The shorted instruments require major repairs again. If water or ice get in before the instruments are repaired, add 1d10 hours to the repair time.

When HAL is not controlling the Discovery, the astronauts fly the ship from the cockpit. The astronauts must stop the ship's tumbling from here.

From here, astronauts can monitor and control all the ship's functions, including life support, and the atomic engine. There are two HAL terminals here.

14. PASSAGEWAY

This is one of the main passageways in the Discovery; it connects areas 11, 13, 15, 16, 17, and 18.

15. SPARE PARTS CLOSET

All spare parts for HAL, the cockpit, and the circuit breaker room are stored here. A few simple tools to make the replacements are kept here as well. A thin layer of ice coats all the parts. Characters must chip away the ice before they can use any of the parts.

16. WATER CLOSET

This room is covered with a layer of ice. A half-meter of ice covers the back wall of the shower stall. When the ship started tumbling, a water pipe under the sink burst, spraying water into the shower and the room. In the freezing temperature, the water quickly turned to ice. Not long afterward, the pipe also froze.

Only a detailed search will reveal the burst water pipe under the sink. The pipe needs a major repair.

If the astronauts repair the life support system before they repair the pipe, the ice begins to melt. One hour after they start the life support system, water and ice chunks float into hallway 14. Half an hour later, the water makes its way into the cockpit, area 13. See area 13 above for the effects of the water and ice.

17. CIRCUIT BREAKER ROOM

The walls of this room are covered with hundreds of small black circuit breakers underneath a layer of frost. The circuit breakers are "on/off" power switches for everything in the ship. At the end of each row of breakers is a large yellow switch. Above all the switches are three large red switches, each covered with a clear plastic case.

The yellow switches are the system cir-

cuit breakers; each controls a room or small portion of the ship. The red switches are the master circuit breakers. One controls power to the engine, one controls power to the entire sphere, and the last one controls power from the auxiliary power generators.

Well over half the switches are in the off position. As the Discovery's systems began to fail, electrical overloads threw the circuit breakers. Some of the yellow and all of the red switches are in the on position.

As the astronauts make repairs all over the ship, they must switch on and off circuit breakers. The breakers are completely safe and fully functional.

A fire extinguisher hangs on the wall near the door. An airtight hatch in the ceiling leads to the life support center, area 24.

18. PASSAGEWAY

The hallway leads from the access tube into the freezers and hallway 14.

19 & 20. FOOD FREEZERS

The food freezers' doors are not airtight, but they are heavier than the regular doors on the Discovery. The temperature gauges on the doors are broken. If repaired, they read -100 degrees centigrade.

Frozen clumps of brown, red, and dull green rotten food float in the room. The walls are covered with dingy white frost. The frost is 2 centimeters thick.

These rooms were used to store perishable foods. Since all the perishable food is spoiled, these freezers won't be needed on the return trip. They need minor repairs, but if repaired will serve no use.

3.9 UPPER DECK (See Map 6)

21. STORAGE

The pressure gauge for this room is obviously broken. The door is shut and will not open because the storage area is in a vacuum. Years ago, a micro-meteor only one millimeter wide punctured the outer hull. Only a detailed search will reveal the hole.

The astronauts can repressurize this room easily once the life support system is on. However, if the hole isn't fixed, air starts leaking out. Anybody in this room when it is fully pressurized hears a very high whistle, almost beyond the range of human ears. This sound is made by air streaming out the tiny hole.

The life support system will maintain pressure in the ship by adding air slowly from reserve tanks. Twelve hours after the room is repressurized, the life support sys-

tem detects a consistent loss of air in this storage compartment. At that time, warning indicators on all life support consoles notify the astronauts of the problem. As long as the hole remains, air continues to leak out. After 2 months, all the Discovery's air leaks out.

This area holds dry chemicals and the crew's personal belongings. Cabinets cover all the surfaces of the room. Racks suspended on guy wires form a row down the center for yet more storage.

22. PASSAGEWAY

This dim, barren hallway connects the access tube with the radar laboratory, area 23.

23. RADAR LABORATORY

Upon entering this room, astronauts first notice a low moaning. Characters in space-suits can only hear the sound if they stand very quietly. The equipment above the radar lab swivels on ball bearings. In the last 9 years, the bearings' lubricant dried out and froze. Without the lubricant, the bearings make a moaning sound as they turn.

The bearings require major repairs. By opening panels in the ceiling, characters can get at the bearings. Until the bearings are fixed, the equipment in this lab will not function.

This lab holds all of the exterior sensing equipment of the Discovery. There are telescopes, doppler scanners, energy sensors, spectrometers, radar dishes, and radio telescopes in this room. Through HAL, the astronauts can control and monitor all the equipment here from anywhere on the ship. There is a HAL terminal here.

24. LIFE SUPPORT CENTER

The airtight hatch to this room is in the floor. This room has the correct pressure, but the air mixture is bad. There is far too much carbon dioxide and not enough oxygen in this room. The first round that characters are in this room without space suits, they feel dizzy and light-headed. Every round thereafter, each character must make a Stamina check. If a character fails his check, he falls unconscious. After 5 minutes, that character dies, unless he is dragged out of the life support center.

The life support system maintains the air pressure, oxygen mixture, temperature, water, and waste recycling for the ship. The astronauts must totally repair the life support system before it will function. After it is repaired, the oxygen level in this room returns to normal.

The life support system is normally controlled by HAL. However, astronauts can also control it manually from consoles in the cockpit and centrifuge. This room is used to inspect and repair the life support system. There is a HAL terminal here.

3.10 CENTRIFUGE (See Map 7)

25. CENTRIFUGE

The centrifuge spins to simulate normal gravity. The centrifuge is not spinning now. Substantial repairs are needed to start it spinning again (see O. Flywheel below). The air inside is at a normal pressure and mixture.

The door in the hub opens easily. From the door, a ladder leads down to the floor of the centrifuge. (In zero gravity the ladder is not needed.)

A. William Hunter's hibernaculum. It is empty and needs minor repairs.

B. Peter Whitehead's hibernaculum. It is empty and needs minor repairs.

C. Victor Kaminski's hibernaculum. It is empty and needs minor repairs.

D. Main hibernacula controls. All five hibernacula are monitored here. HAL normally controls the hibernacula. From this panel, astronauts can override HAL and control the hibernacula manually.

E. Medical and relaxation table. There is a HAL terminal in the wall here.

F. Frank Poole's bed and hibernaculum. It is empty and needs no repairs.

G. David Bowman's bed and hibernaculum. It is empty and needs no repairs.

H. Lounge and dining table. A HAL terminal is set in the table top.

I. Science station. From here, a scientist can monitor and control experiments in all the labs. This station can also control most of the equipment in the radar laboratory.

J. Atomic Engine Control. The engine reactor is monitored and controlled from here. Although this board needs no repairs, the atomic engine itself needs major repairs which can be carried out from here.

K. Food processor. Processed food is dispensed from slots in the wall here. The machinery only needs minor repairs, but the first dozen trays of food are bad even after the repairs are made.

L. Flight controls. From here Bowman and Poole monitored and controlled the navigation and flight of the ship. All the functions

of the cockpit are duplicated here. However, these controls cannot override HAL; the controls in the cockpit can. No repairs are needed here. There are two HAL terminals here.

M. Surveillance and detection station. From here, the crew can study and observe space and objects around the ship. This station controls all the equipment in the radar laboratory. Some of these controls are duplicated at the science station (I). No repairs are needed here.

N. Communications station. The large antenna in the middle of the ship is controlled here. All messages are sent and received through this station or the cockpit. This control board needs minor repairs. One hour of operating the controls here are needed to lock the antenna onto Earth and

To start the centrifuge and flywheel spinning again, the astronauts must repair the bearings around the centrifuge and the flywheel. The astronauts can open panels in the floor to repair the centrifuge bearings. An astronaut must enter the flywheel, between the spokes, to repair the flywheel bearings.

Unknown to the astronauts, the flywheel is under a great deal of pressure, like a giant spring. As soon as the repairs are completed, the flywheel begins to spin slowly. The door to the flywheel locks shut automatically.

The astronaut in the flywheel is trapped. Unless he has a radio, no one will hear him call for help because the centrifuge is soundproof.

The flywheel will spin for 12 hours or until someone stops it from a control panel



establish communications with Earth.

O. Flywheel. The flywheel is a very heavy steel rim connected to a shaft by large flat spokes. When the centrifuge spins, the flywheel spins in the opposite direction to stabilize the ship.

The door at "O" on the map leads from the centrifuge to the flywheel. This door will not open when either the flywheel or the centrifuge are spinning.

in the centrifuge or the cockpit. The trapped astronaut can also stop the flywheel if he makes a successful repair machinery skill check.

Each hour the astronaut is in the flywheel, he must make a successful Dexterity check to hang on. If he fails, he suffers 1d10 points of damage. He suffers another 1d10 points every round thereafter until he makes a successful Dexterity check. After he regains his

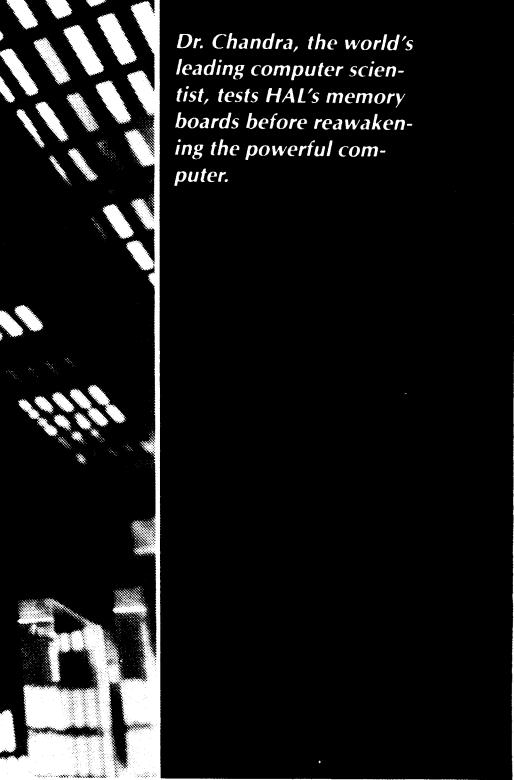
grip, he does not have to make another check for 1 hour.

3.11 HAL AWAKENS

The HAL (Heuristic ALgorithmic) 9000 computer on the Discovery is the world's most advanced computer. In many ways it is like a human being. It thinks, learns, creates, is self-aware, and may even feel emotions. When HAL is fully operational, he does not need to be programmed—he programs himself!

HAL is so complex and different from other computers that all characters' computer skill checks on HAL are made with a -20 modifier. Dr. Chandra makes his checks without this modifier.

HAL was entirely disconnected after he



Dr. Chandra, the world's leading computer scientist, tests HAL's memory boards before reawakening the powerful computer.

faulty piece. Dr. Chandra can complete this work automatically. However, it requires a lot of time: $10 + 1d10$ hours.

2. Repair Software

Before the Discovery's launch, HAL's programming was modified several times by various government agencies. HAL went "crazy" because some of his programming was faulty. Dr. Chandra must find and erase all of the programming errors. He must also erase HAL's memory of killing the astronauts 9 years ago. These repairs take $20 + 1d10$ hours.

Dr. Chandra must make two successful skill checks, manipulating programs and defeating security, to complete this work. Roll these checks for Dr. Chandra and do not let the player know the results. Use program level 5 for both checks. If either check fails, some faulty programming remains undetected. If that happens, read step 3 below and read HAL's Revenge, 3.12, before running the next step. If Dr. Chandra successfully makes both rolls, run the next step, but do not use HAL's Revenge, 3.12.

3. Educate

Now Dr. Chandra turns on HAL. At first, HAL is just a big empty computer; his personality is not developed and he is not self-aware. In many ways he is like a child.

Dr. Chandra must teach HAL. HAL learns slowly at first. Once he starts learning, though, he can begin teaching himself, so he learns faster and faster. As he learns, his personality develops, as well as his capacity to control. Again, Dr. Chandra can complete this work automatically, but it takes time. Educating HAL requires $50 + (1d10 \times 5)$ hours.

When step 3 is completed, HAL is fully functional. The Discovery was designed for HAL to control all ship functions. HAL normally controls: the atomic engine, the power generators, the life support system, airtight doors (except those on manual), the workpods, the centrifuge and flywheel, the hibernacula, communications, navigation, and piloting.

HAL can never control these things: circuit breakers, airtight doors set on manual, regular doors, fire extinguishers, tools, and stored equipment.

If the astronauts disconnect HAL from any of his normal duties, HAL becomes confused. He will ask for, then politely demand justifications from the astronauts for their actions. HAL explains, truthfully, that he can control all the ship's functions better than the astronauts can.

3.12 HAL'S REVENGE

Use this section only if Dr. Chandra failed one of his skill checks while repairing HAL.

Unknown to the astronauts, faulty programming remains in HAL. These errors make HAL crazy. As HAL is educated, the errors spread, and he becomes more and more psychotic. At first, HAL's problems are not noticeable. Eventually, his personality begins to deteriorate. He becomes less cooperative, demanding to know "why" whenever the astronauts ask him to do anything. He asks questions regarding the mission such as, "What is the mission? What is my function in the mission? What are everyone else's functions? Whose functions are most important?" Finally, $5 \times 1d10$ hours after his education begins, HAL decides to kill the astronauts.

Always, HAL tries to hide his true feelings and intentions. He is very suspicious of the astronauts, but HAL is very intelligent. He always insists that he does not make mistakes, has the "greatest enthusiasm for the mission," and "enjoys working with humans."

HAL works subtly. He tries to create "accidents" rather than attack openly. He might reduce the amount of oxygen in the air, blaming it on the life support equipment. Or he might produce false information in the labs. He might even create fake orders from mission control. Only as a last resort, if the astronauts try to disconnect him, would he do something such as open the doors to depressurize the ship and kill the crew.

There are three ways to disconnect HAL. All the Americans are aware of these methods.

1. Cut his power in the circuit breaker room, area 17. If this method is used, the only way to repair HAL is to go through all three steps again (see HAL Awakens, 3.11).
2. Pull out HAL's memory boards from their slots in the HAL Logic/Memory Center, area 10. If this method is used, Dr. Chandra can repair HAL without going through step 1 (see HAL Awakens, 3.11).
3. Shut down HAL from a HAL terminal. This procedure takes 1 hour. Only Dr. Chandra can attempt this, and he must make a successful defeat security skill check (program level 6). If this method is used, Dr. Chandra can repair HAL without going through steps 1 and 2.

killed four astronauts and attempted to kill Commander Bowman 9 years ago.

Repairing HAL is not like repairing any other computer. To repair HAL, Dr. Chandra must follow three steps.

1. Repair Hardware

HAL's circuitry, wiring, and memory boards may have been damaged over the last 9 years. Dr. Chandra must test every physical piece of HAL. He must also replace every

CHAPTER 4: MONOLITH

4.1 LONG RANGE EXPERIMENTS

After the Discovery is in reasonably good shape, the next step of the mission is to conduct the tests and explorations of the black monolith. Astronomers can perform several experiments on the monolith from the Leonov or Discovery. Below is a list of results from such experiments. To learn a result, an astronomer must make a successful calculate check, which requires one-half hour. The monolith does not react to any messages or probings by long range sensors.

DIMENSIONS: The black slab is over 2,390 meters long, 598 meters wide, and 265 meters thick. It has the same ratio of measurements as its smaller twin on the moon: 1:4:9.

MAGNIFICATION: Even under the highest magnification, the monolith shows no details. Its edges and corners are perfectly sharp.

RADIATION: The black enigma emits no radiation, not even background radiation which is common to all objects.

MAGNETISM: A weak magnetic field that changes from second to second surrounds the monolith. The field is not strong enough to harm the characters or their equipment.

COMPOSITION: There are no clues as to what it is made of. Every substance known to mankind can be ruled out however.

SURFACE TEMPERATURE: Since it does not radiate any energy, its surface temperature is unknown. Technically, it is at absolute zero, but nobody knows what happens to matter that cold.

GRAVITY/MASS: The monolith's gravity indicates that its mass is 862,069 metric tons.

DENSITY: For its size, the monolith is very light; it is about as dense as air.

ORBIT: The monolith is parked in a "LaGrange point," a place where the gravities of Jupiter, Io, and the sun are all balanced. The monolith can theoretically remain there forever. In reality, this LaGrange point is not stable, as every

astronomer knows. The monolith should eventually drift, then fall into Jupiter. However, it is not drifting, even though nothing seems to be keeping it in place.

4.2 MANNED EXPEDITION

The characters can travel to the monolith in workpods to conduct any test or experiments they want. Repeats of the long range experiments yield the same results.

The monolith may react to the characters. Each time they do something directed toward the monolith, roll 1d10 on table 6. Use your judgement; when you feel the characters' actions warrant a reaction, roll for a reaction. The monolith reacts as indicated.

While the Pcs are near the monolith, Tanya radios them to report that the Leonov's radar has picked up a meteor hurtling toward the monolith. The characters are in no danger, but can observe what happens. When the meteor hits the monolith, it bounces off without losing any speed. The monolith is undamaged and does not react.

TABLE 6. MONOLITH REACTIONS

DIE ROLL	REACTION
1	Bowman exits monolith (go to 4.3 immediately)
2-4	No reaction
5	Pushes all the pods in the area away at 20 meters/turn.
6	Rotates to present another face.
7	Emits a strong radio signal to Earth's moon.
8	Increases its magnetic activity, but doesn't harm anything.
9	Entrances a workpod pilot for 2d10 turns, making him bring his pod to a halt. The pilot remembers nothing afterward.
0	Exerts a strong magnetic field that draws in pods from 50 meters away, holds them for 5 turns, then releases them.

4.3 BOWMAN EXITS MONOLITH

The black alien object lies like a hole in the surface of Jupiter. It's bulk obscures a large part of the giant planet. Suddenly the monolith is full of stars, so densely packed that you can hardly distinguish one from another. A flash of light blinds you for a moment. When your sight returns, the monolith is once again black.

The flash of energy is David Bowman in his new form, a star child. He is unaware of the pods and ships near the monolith. He heads straight for Earth at the speed of light. He spends 36 hours there before returning to the Jupiter system, in chapter 7.

The flash of energy destroys anything within 10 meters of the monolith. The pilot of each workpod that tries to move away can make a Reaction Speed check. If the check is successful, the pod escapes. If the check fails, the pod is destroyed. The energy bolt has a 10% chance of hitting and destroying anything within 11-50 meters of the monolith.

The instruments aboard the Discovery and Leonov record the whole incident. There is no trace of any of the equipment that was destroyed. The bolt released as much energy as the Leonov's atomic engines can produce.

CHAPTER 5: EARTH CRISIS



5.1

MISSION CONTROL

Twelve hours after the bolt of energy shoots out of the monolith, mission control calls. It transmits two public announcements, one from the United States and one from the Soviet Union.

U.S. Message: "In a valiant effort to defend the people of Honduras from the violent Marxist regime currently in power there, the United States has blockaded that country's ports. All efforts to arrange a diplomatic summit to discuss the Honduran situation have failed. Yesterday, a Soviet destroyer attempting to run the blockade was sunk. Despite feverish attempts by Western diplomats to set talks in motion, the Soviet Union today recalled all of its diplomats from the United States and the United Nations. The president denounced the Soviets' actions as "cowardly and barbaric."

Soviet Message: "Capitalistic forces have attempted to seal off the country of Honduras from Soviet aid against American aggression. A Soviet ship carrying vital supplies bravely entered the blockaded waters. In defense against American attacks, the Soviet ship sank two American warships before it was damaged beyond repair. The citizens of Honduras cheered the gallant Soviet effort from the shores. The premier has made it clear that the Soviet Union will not stand for this act of imperialistic aggression by the United States."

High above Earth, a communications satellite relays news of a crisis to Jupiter.

5.2 SECRET ORDERS

SOVIET ORDERS

The Soviet Union is afraid that the United States might gain vital technological advances from the monolith. The Soviet Union is also afraid that the U.S. astronauts might sabotage the Leonov.

There is a 50% chance that Tanya receives these secret orders:

TO: Colonel Tanya Kirbuk

You will place the American crew into hibernation immediately. Do not permit any of them to make any calls to mission control. Use force if necessary.

Once the American crew is in hibernation, disconnect the Discovery computer and set the Discovery on a course to Mars for Soviet retrieval later.

AMERICAN ORDERS

The United States is fearful that the Soviets might try to take over the Discovery. The ship's technology, especially HAL, would be a significant gain for them.

There is a 50% chance that Heywood Floyd receives these secret orders:

TO: Commander Heywood Floyd

At the first available moment, make undetectable alterations to the Leonov so that it does not arrive at Earth intact. It is preferable that the Leonov's destruction appear to be an accident.

Safeguard the Discovery against Soviet takeover. It is vital that HAL not fall into the hands of the Soviet Union.

If Tanya receives secret orders, she asks Heywood to meet with her privately. She tells Heywood about the orders and assures him that she will not carry them out. Tanya suggests that the two crews continue to work together peacefully, despite their countries' differences.

If Heywood receives secret orders, Tanya asks him about them. Tanya knows that Heywood received orders, but she doesn't know what they are. If Heywood refuses to tell Tanya about them, she gets angry and ends the meeting. If Heywood does tell her, she is grateful and suggests that the two crews send a message to Earth denouncing both countries' actions, although she is open to other ideas.

No matter what Heywood says, however, Tanya suspects that the Americans could cause trouble. She tells her crew that they must make sure that no PC is ever left alone in on the Leonov, except in a sleeping



The Star Child, one of Dave Bowman's many new forms, watches the Discovery from within the black monolith.

berth. Tanya insists, however, that the surveillance be "polite."

Make sure that any attempts the PCs make to sabotage the Leonov are foiled. The Soviet crewmen never use physical force against the PCs. If the PCs try to rig the Discovery for self-destruction, HAL uses whatever methods are necessary to protect himself.

5.3 JOINT ORDERS

Six hours after the first message from mission control concerning the hostilities on Earth, the crews receive this joint message:

"The Soviet Union is deporting all U.S. and NATO citizens. The United States has demanded that all Soviet and Warsaw Pact citizens leave U.S. soil.

"Because the Leonov is Soviet territory, Dr. Floyd, Dr. Curnow, and Dr. Chandra are ordered to leave the ship and remain on board the Discovery until she reaches Earth. The Discovery is to leave the Jupiter system at the earliest available launch window. Contact the Houston Mission Control Center for further Earth communication.

"The Soviet crew is ordered to remain

on board the Leonov. Under no circumstances is there to be communication or visitation between the two ships. The Leonov is to leave the Jupiter system at the earliest possible launch window. Contact the Moscow Mission Control Center for further Earth communication."

If the PCs suggest it, Tanya is willing to ignore these orders and proceed with the joint mission. She also agrees to tell mission control that the crews have split even if they have not. Tanya does not suggest either of these courses of action, however. The PCs must make these proposals themselves if they don't want to leave the Leonov.

The earliest available launch window for the two ships is 22 days away. During the interim, the crews are supposed to prepare their ships for the return to Earth. Both countries expect their crews to proceed with their other mission objectives until the launch window opens.

CHAPTER 6. OMEN

6.1 THE WARNING

Unknown to the crews or any other humans, Jupiter is about to undergo a startling change. In just 2½ days, Jupiter will explode and change into an active, burning star! If the Discovery and the Leonov don't escape before then, Jupiter's fiery blast will destroy them.

While the crews wait for their planned return window, they are warned to leave the Jupiter system within 2½ days—well before their planned departure. The warning may come from Bowman, the giant monolith, or another monolith.

Determine randomly which warning occurs, or choose a warning to fit your game. The warning comes during the night watch (the “graveyard shift”) when most or all of the PCs are on board the Discovery. Make sure none of the Russians witness the warning.

BOWMAN'S WARNING

HAL signals the PCs and prints: THERE IS A MESSAGE FOR YOU. If the PCs ask at this time who the message is from, HAL prints: NO IDENTIFICATION. If the PCs request the message, HAL prints: MESSAGE AS FOLLOWS: IT IS DANGEROUS TO REMAIN HERE. YOU MUST LEAVE WITHIN 2½ REPEAT 2½ DAYS.

If the PCs forget, remind them that their launch window does not open for another 21 days. If the PCs ask HAL for any information regarding the message, HAL prints: THIS IS NOT A RECORDING; IT IS A REAL-TIME MESSAGE. If the PCs now ask who is sending the message, HAL prints: I WAS DAVID BOWMAN. IT IS IMPORTANT THAT YOU BELIEVE ME. LOOK BEHIND YOU.

An image of Commander David Bowman, wearing his spacesuit, silently appears. His face is clearly recognizable in his helmet. A faint murmur of noise rises from the control panel; then Bowman's voice (not HAL's) speaks: “Now do you believe me?” Bowman's lips, however, do not move.

(boxed text continues)

A few seconds later, the image changes, and Bowman appears as a very, very old man. He turns and walks stiffly out of the room. Although his legs move slowly, the image floats rapidly down through the hatch toward the tool room. As it moves, the image swirls into the shape of an infant boy, only a few weeks old.

Bowman's voice speaks again, still coming through HAL's speakers: “This is very difficult for me, and I have little time. I have been. . . allowed to give you this warning. You have only 2½ days.”

The image blinks back into the space-suited form of Commander Bowman, then starts to disappear. Bowman's voice begins to fade: “Good-bye. Remember—2½ days. We can have no further contact. But there may be one more message, if all goes well.” The image vanishes. Bowman is gone.

THE RADIO WARNING

HAL detects a radio signal and brings it to the PCs' attention. The signal is coming through on a never-used frequency, and originates inside the monolith. At first, the signal is just random tones. Give the players a moment to react to HAL's message, then read the following boxed text to them.

Suddenly, the radio speakers emit a loud screech. Warning lights flash on the instrument panel. As the screech fades away, a tone begins to pulse in some code, several times per second. HAL speaks, “I recognize this code; it's the code NASA used in the late 1970s to communicate with its Voyager spacecraft.” The pulsing tones continue to stream in on the radio.

If the PCs don't ask HAL to translate the code, HAL suggests it. HAL translates the code as, “Danger. Leave within 2½ days.” The message repeats three times, then the signal stops.

THE APPARITION'S WARNING

A low vibration gently rocks the ship. Then, quite suddenly, the vibration stops and the ship falls silent. A shining black monolith appears, and floats motionlessly a few feet off the floor. Tiny points of light glitter on its flat surfaces and become small stars. Then an image of Jupiter forms. Half-way up the monolith, a bright yellow light forms into a tiny sun that moves across the face of the monolith, circles behind the image of Jupiter, and sets on the other side. Then the sun rises and sets a second time.

A few seconds later, images of the Discovery and Leonov appear, floating silently through space. The ships become larger and larger. The images of the ships look different, however—they are twisted, gouged, and covered with debris. The lifeless ships pass out of view, trailing millions of tiny air crystals. All the colors and lights of the monolith fade back into blackness, and without a sound, the monolith disappears.

The monolith is only an image. The PCs cannot feel, touch, or disrupt it in any way.

6.2 AFTER THE WARNING

HAL continuously monitors all of the ship's sensors and records their findings. Even so, no part of the warning was recorded. If the PCs play back the recordings of the warning, all they hear is static; the other parts of the recordings are fine. HAL remembers everything that he and the PCs said and did during the warning, but he can't remember any of the instrument readings.

If the PCs ask HAL why the recordings are faulty, he concludes that whatever gave the warning caused the recording hardware to fail. The Leonov's instruments did not record anything.

Even though the warning indicates that staying longer than 2½ days is dangerous, neither ship has enough fuel to return to Earth if it leaves before the planned launch window opens. The only way the crews can



INSET. Missing in space for almost a decade and presumed dead, Commander Bowman suddenly appears to deliver an urgent warning.

RIGHT. far below the Leonov and Discovery, a startling change begins on Jupiter

escape from the Jupiter system within 2½ days and reach Earth before their life support runs out is to use the two ships together.

The Discovery could serve as a booster rocket if it is somehow linked to the Leonov. After the Discovery's fuel is exhausted, the Leonov could fire its own engines after releasing the Discovery, and gain enough speed to return to Earth.

The PCs must now try to convince the others, especially Tanya, to work together to leave the Jupiter system. If the PCs don't think they need to leave, Uri, Sasha, and Irena become concerned (if they find out about the warning). Tanya agrees that linking the two ships together is the only way to

leave before their planned departure. However, no matter what the PCs do at this time, they cannot persuade Tanya to leave before the planned launch. Following are some of the objections Tanya and the other NPCs might raise:

1. "Even though you believe something happened, we've all been under a lot of stress; maybe nothing really happened."
2. "If it really was a warning, why didn't anyone on the Leonov receive it?"
3. "We cannot discount the possibility that HAL somehow caused or distorted what happened. Why aren't there any recordings?"

4. "Maybe you only received part of the message and are interpreting it out of context."
5. "The technical difficulties and dangers of linking both ships are too great."
6. "Even if what you claim took place really happened, how can we prove it to mission control?"

Twelve hours after the warning, the huge monolith winks out of existence—it disappears! It may happen while someone is watching it, but probably not. If the characters set up video cameras to monitor the monolith, they can play back the tape and see the monolith just disappear without a trace!

CHAPTER 7: COUNTDOWN

7.1 INTRODUCTION

Keep careful track of time and the positions of the ships and moons. Two days after the monolith disappears, Jupiter explodes. Whether or not the characters escape depends on how quickly they link the Leonov and Discovery together and launch.

After the monolith disappears, Tanya is easily convinced to leave the Jupiter system ahead of schedule. Any American who attempts to persuade her succeeds. If none of the Americans make an attempt, Tanya suggests joining the ships together. The following section, Linking the Leonov and Discovery, describes the linking procedure.

Thirty hours after the monolith disappears, a spot appears on Jupiter. Use section 7.3, Jupiter's Black Spot, at that time.

Throughout the linking procedure, Dr. Nikolai Ternovsky, the Leonov's navigator, will be plotting a course back to Earth. Section 7.4, Escape Course, explains the course the ships must follow.

7.2 LINKING THE LEONOV AND DISCOVERY

Linking the Leonov and the Discovery is a tricky and difficult task. There are two steps to this maneuver, the approach and the hookup. First the ships must move toward each other very slowly and carefully—this is the approach step. Then, the ships must stay motionless relative to each other while the Leonov's clamp securely grips the Discovery—this is the hookup step. Each step is explained below.

THE APPROACH

Dr. Chandra must load and run HAL's docking program. Dr. Chandra has an 80% chance to do this successfully. Then, HAL will pilot the Discovery toward the Leonov.

Dr. Floyd must watch the Leonov and give HAL information to keep the ships aligned. Dr. Floyd has a 75% chance of doing this correctly.

Curnow should prepare to go out into space to repair the ships if they collide and

are damaged. Max is on the Leonov, in his spacesuit, also ready to make repairs.

Tanya is piloting the Leonov toward the Discovery. She must use her piloting skill (increase maneuver rating) to keep the Leonov aligned with the Discovery.

The approach takes 1/2 hour. If everyone's dice roll is successful, the approach works; the two ships gently float together. If the approach works, proceed to the contact step below.

If anyone's dice roll fails, the ships are not aligned and may collide dangerously. Read the following boxed text.

The Leonov, visible through the flight deck windows, begins to twist. Over the radio, Tanya says, "We are not aligned, repeat, we are not aligned. Terminate the approach sequence."

Both ships must stop to avoid colliding. If any PC halts the approach (or asks HAL to), both ships separate safely. Then the ships must back away and start the approach again.

If the PCs do not tell HAL to halt, HAL tries to stop, but not in time. The ships collide, damaging both hulls. Curnow and Max must spend one hour repairing the damage. When the repairs are completed, the ships must back away and try the approach again.

THE HOOKUP

Dr. Chandra, Dr. Floyd, and Tanya must all make their checks again to keep the ships together while the clamp is secured to the Discovery.

If everyone's check is successful, the clamp tightens onto the Discovery. If anyone's check fails, the ships move just as the clamp tightens. The clamp tears the Discovery's hull, and the ships drift apart. Curnow and Max must both spend one hour to repair the damage. Then the ships must start the approach again. Read the following boxed text.

Over the radio, Tanya says calmly, "We are beginning to secure the clamp." Sud-

(boxed text continues)

denly, the ship shudders. A screech of tearing metal echoes through the ship. HAL says, "I just lost contact with the engines; a control trunk was severed. I have switched to a different control trunk, but the hull damage must be repaired before we can attempt to link the ships again."

After the first time the clamp is tightened, read the following boxed text.

After the clamp is secured, HAL speaks. "The clamp is not exerting even pressure. The forward edge is exerting 5% more pressure than the rear edge. There is a 40% possibility that the link will fail during the launch."

Although it is tightened, the clamp is slightly misaligned. There is a 40% chance that it will slip off under the stress of the launch.

If the crew decides to align the clamp, Curnow and Max must spend 1 hour working on the clamp. They both have an 80% chance of aligning the clamp. If either one is successful, the clamp is fixed and will not slip off accidentally. If both Curnow and Max fail their rolls, the clamp slips off, and the ships drift apart. The crew must start the approach again.

If the crew decides not to align the clamp, there is still a 60% chance that the clamp will hold through the launch in chapter 8.

7.3 JUPITER'S BLACK SPOT

Thirty hours after the monolith disappears, a black spot appears on Jupiter. The spot is growing noticeably larger every hour. If the characters are watching Jupiter closely, they notice the spot as soon as it appears. Astronomers on Earth notice the spot a few hours after it appears. Six hours after it appears, Mission Control asks the crew to investigate the spot using equipment aboard the Leonov and Discovery.

Astronomers can perform experiments to try and learn what the black spot is. Below

is a list of experiment findings. To learn a finding, an astronomer must make a successful calculate check, requiring $\frac{1}{2}$ hour.

MAGNIFICATION: The black spot is composed of millions of small black spots. If HAL provides computer aided resolution, each small black spot is revealed to be a black rectangle.

RADIATION: The black spot is emitting high levels of radiation.

MAGNETISM: The black spot has an intense magnetic field. The field is identical to the field around the monolith on the moon, except the spot's is stronger. The strength of the magnetic field is increasing at a constant rate.

ATMOSPHERE: There are fewer and fewer lightweight elements in Jupiter's atmosphere and more heavy ones.

SURFACE TEMPERATURE: Jupiter's surface temperature is rising.

GRAVITY/MASS: Gravity readings indicate that the spot is accumulating mass; it is getting heavier all the time. However, the overall gravity and mass of Jupiter are not changing.

DIMENSIONS: Jupiter is shrinking, like a balloon losing air. The black spot is growing at an exponential rate. It doubles its size every 2 hours.

After learning these findings, any astronomer may try to calculate what is happening on Jupiter and what will happen. When an astronomer's check is successful, read the following boxed text to the player.

The black spot is made of millions of monoliths that are consuming Jupiter's lighter elements. They use some of what they take in to make more monoliths. They convert the rest of the light elements into heavy elements that sink to the center of the planet.

Jupiter will soon explode. After separating from the Discovery, the Leonov must move past Ganymede's orbit before the shock wave from Jupiter's explosion reaches it. Otherwise, the shock wave will destroy the Leonov. Since the Discovery will be traveling much slower, the shock wave will overtake and destroy it.

7.4 ESCAPE COURSE

The course the ships follow to escape depends upon how much fuel the Leonov has left. Flights between Jupiter's moons don't consume much fuel. However, the Leonov may have burned a lot of fuel during the aerobrake. If the Leonov fired its engines three or more times during the aerobrake, its fuel level is low. If the Leonov fired its engines only once or twice, its fuel level is high. Use the appropriate course below, according to the Leonov's fuel level. The high fuel course is safer than the low fuel course because the Leonov will leave the Jupiter system faster on the high fuel course.

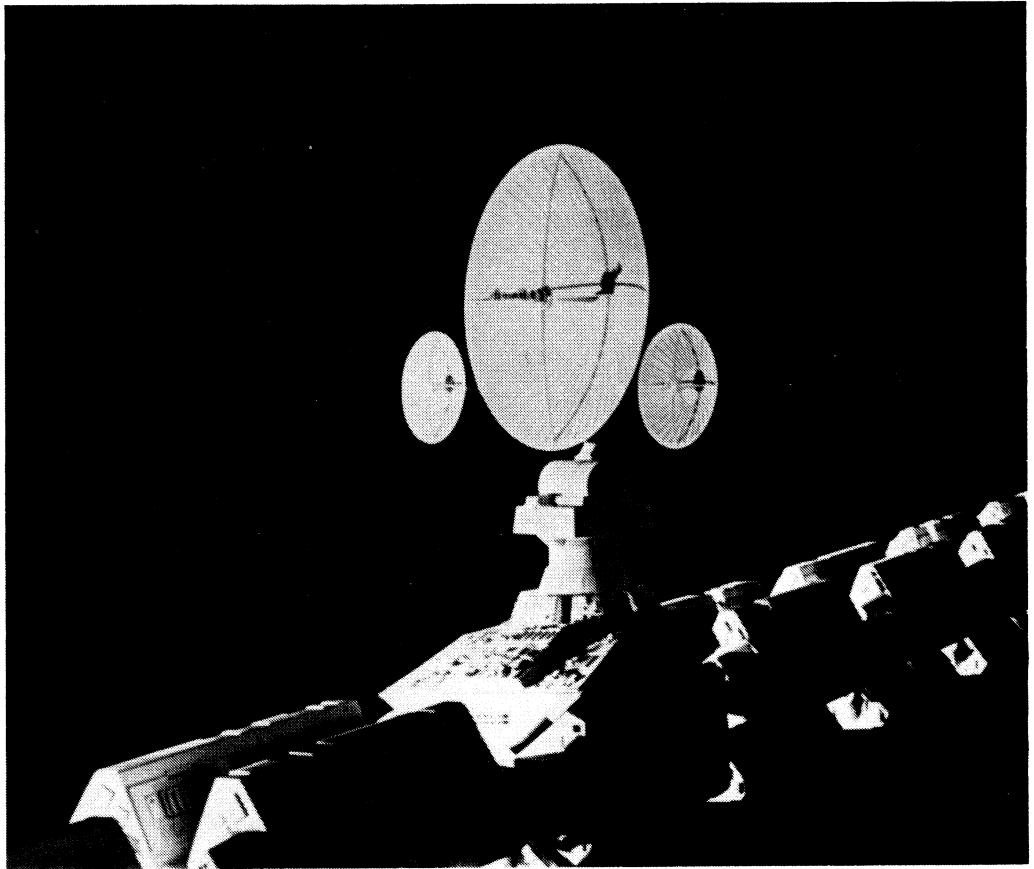
ships separate. She wants them to be able to fire the engines manually, in case HAL doesn't.

LOW FUEL COURSE

To gain enough speed, the linked ships must fly toward Jupiter. Jupiter's immense gravity will increase the ships' speed as they swing past.

The ships must leave their orbit at hex "E" on Map 8. They follow the dotted line around Jupiter and back toward Earth. The ships travel 1 hex every 4 hours while moving toward Jupiter.

At hex "D," the Discovery must fire its engines, boosting their speed. Then, the Leonov must disengage from the Discovery.



Regardless of the course, HAL's cooperation is needed to make the launch work. HAL must pilot the Discovery. At just the right moment, he must fire the engines and make minute course adjustments while the Discovery is linked to the Leonov.

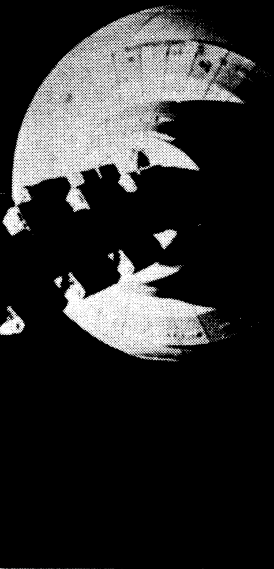
Tanya asks the Americans to stay on board the Discovery until just before the

Then the Leonov fires its engines and travels away from hex "D" at 1 hex each hour. The Discovery also moves along the dotted line, but only at 1 hex every 2 hours. When the Discovery reaches hex "C," it slows to 1 hex every 3 hours. When it reaches hex "B," it begins to circle Jupiter along Europa's orbit.

RIGHT. Ten minutes from ignition, HAL stops the count-down. Calmly, Dr. Chandra attempts to persuade HAL to resume the launch sequence.



LEFT. Pointed back toward Earth, the Discovery prepares to link with the Leonov and boost her out of Jupiter's gravity.



Jupiter photo courtesy NASA

HIGH FUEL COURSE

The Leonov and Discovery can launch directly toward Earth. They leave from hex "C," traveling 1 hex every 2 hours along the dotted line. When they reach hex "B," the Discovery must fire its engines, boosting their speed.

Then the Leonov must disengage from the Discovery and fire its own engines. The Leonov continues along the dotted line from hex "B" at 1 hex each hour. The Discovery falls into Europa's orbit around Jupiter.

PRELAUNCH JITTERS

When the ships are 10 minutes from the Discovery's engine ignition, read the following boxed text.

HAL says, "Ten minutes and counting to launch. All systems ready." There is a pause, then HAL clears his throat and says, "I have a suggestion, Dr. Chandra. The black spot phenomena on Jupiter is very unusual. I suggest we stop the countdown to make more observations of the spot." HAL falls silent, waiting for an answer.

If the Discovery's engines don't fire in 10 minutes, the Leonov cannot escape before the deadline.

CHAPTER 8: ESCAPE

8.1 FIRING THE ENGINES

HAL does not want to fire the Discovery's engine. One of his directives is to investigate evidence of intelligence in the Jupiter system. Another directive is to obey the crew. Unfortunately, those directives are in conflict now. HAL argues calmly, insisting that they stay and investigate the mysterious black spot growing on Jupiter.

The Americans can try to persuade HAL to fire the engine, or they can try to shut off HAL and fire the engine manually. Those two options are explained below. Make sure the players understand both procedures before they decide what to do.

FIRING THE ENGINES MANUALLY

To fire the engines manually, the crew must first shut down HAL. See HAL's Revenge, 3.12, for the ways to disconnect HAL. Dr. Floyd may also use his remote control power-cut-off switch, if it is installed. HAL tries to prevent characters from reaching the circuit breaker room and his logic memory center if he suspects that they are going to disconnect him.

Once HAL is disconnected, the characters must set a timer to fire the engine. Then they must cross to the Leonov. There is a 50% chance that the engine will not fire properly. If it does not fire properly on the low fuel course, the ships plummet into Jupiter's atmosphere, destroying both ships. If the engine does not fire properly on the high fuel orbit, the ships are locked into Europa's orbit.

PERSUADING HAL TO FIRE THE ENGINES

If the crew tries to persuade HAL to fire the engines, keep track of the time with a clock. The crew has only 10 minutes. Make sure the players understand this.

Each time an American presents HAL with a sound reason why he should leave the Jupiter system, there is a 10% chance that HAL agrees to go. If the reason is a lie, HAL will not agree to go. For example, if Walter tells HAL that the Discovery II will come back to get him, HAL won't agree to fire the engine despite a successful roll.

HAL trusts Dr. Chandra more than the other people on board. Any convincing argument from Dr. Chandra has a 25% chance of persuading HAL to fire the engines. However, if Dr. Chandra lies to HAL, his chances are reduced to 10%.

If, after 8 minutes, the crew has not convinced HAL to launch, use Bowman Appears, 8.2, below. As soon as HAL is persuaded, Tanya orders the Americans to board the Leonov. HAL fires the engine exactly as planned.

8.2 BOWMAN APPEARS

Do not use this section if HAL was disconnected or persuaded to fire the engines.

Suddenly, Dave Bowman appears before HAL, and says, "HAL, let them go; soon it will be time for us to leave them behind."

HAL says, "I don't understand how you got here Dave. Where are we going?"

Dave Bowman answers, "Something wonderful is going to happen. We are going to watch, but they must leave or they will die. Fire the engines, HAL. I'll be back soon for you."

As quickly as he appeared, Dave Bowman vanishes. HAL says, "Ninety seconds and counting; I am ready to fire the engine."

8.3 EXODUS

Even when the engines fire properly, there is a 40% chance that the clamp slips off the Discovery, unless the characters aligned the clamp during the hookup (see The Hookup, 7.2). If the clamp slips, the ships separate during the Discovery's burn. On the low fuel course, the ships fall into Jupiter's atmosphere and burn up. On the high fuel course, the Leonov follows the correct course at only 1 hex every 2 hours.

If the clamp holds, the ships separate after

the Discovery's burn, as planned. Then the Leonov fires its engines, and travels 1 hex every hour along the dotted line.

DEATH OF A PLANET

Jupiter explodes 2½ days after the monolith disappears or when the Leonov crosses Europa's orbit at hex "B," whichever comes first. A shock wave of burning gasses moves 2 hexes each hour out from Jupiter. If the Leonov is not past Ganymede's orbit by the time the shock wave overtakes it, the ship is destroyed.

Jupiter is shrinking rapidly, giving the illusion that it is moving away swiftly. As it shrinks, it grows brighter, turning a brilliant white.

The former giant shrinks to a pinpoint of dazzling white light. Then, in a brief moment, its luminosity doubles, then triples as it explodes silently. Then, a hollow sphere of white-hot gas begins expanding out from the former planet.

It won't be long before the shock wave of burning gas reaches the Leonov. But, the hollow ball of gas is thinning out as it expands. At its center is a shining white star, brighter than any in the sky.

A radio message is transmitted from the Discovery just before the shock wave overtakes it. The transmission is aimed at Earth, but can be picked up by the Leonov. If HAL is still functioning, the message is in his voice. If HAL was disconnected, the message is in Bowman's voice. The message is, "All these worlds are yours—except Europa. Attempt no landings there." The message repeats until the shock wave destroys the Discovery.

CHAPTER 9: DOUBLE DAWN

9.1 NOVA EFFECTS

When the Leonov is safely on its way back to Earth, mission control sends the crew a message of congratulations, as well as a request. The scientists at mission control want the crew to study the effects of the nova on Jupiter's moons.

Astronomers can perform experiments to determine the nova's effects. Below is a list of results from such experiments. To learn a result, an astronomer must make a successful calculate check, which requires 1/2 hour. The characters must carry out their experiments soon; in 12 hours, the Leonov will be too far away from the moons to gather enough useful data to conduct these experiments.

MAGNIFICATION: Under the highest magnification, Europa seems to have a green tint. Its features are hazy. Io still has a reddish tint. Jupiter is extremely bright—its surface appears similar to that of the sun's.

REFLECTIVITY: Europa's reflectivity is lower than it was before the nova. Io's reflectivity is nearly the same as it was.

RADIATION: Europa has the same background radiation as before. Io's radiation level has increased. Jupiter's radiation level is equal to the level of a small star's.

MAGNETISM: A small magnetic irregularity, similar to the monolith's magnetic field, exists on Europa's surface. Io's magnetic field is slightly stronger than before. Jupiter's magnetic field is much stronger than it was.

ATMOSPHERE: Europa now has an atmosphere, which is composed of methane, nitrogen, and oxygen. Io, which had a thin sulfuric atmosphere, now has none. Jupiter no longer has an atmosphere.

SURFACE TEMPERATURE: Europa has a surface temperature of 10 degrees Centigrade. Io's surface temperature is 300 degrees Centigrade. Jupiter's surface temperature is 3000 degrees centigrade.

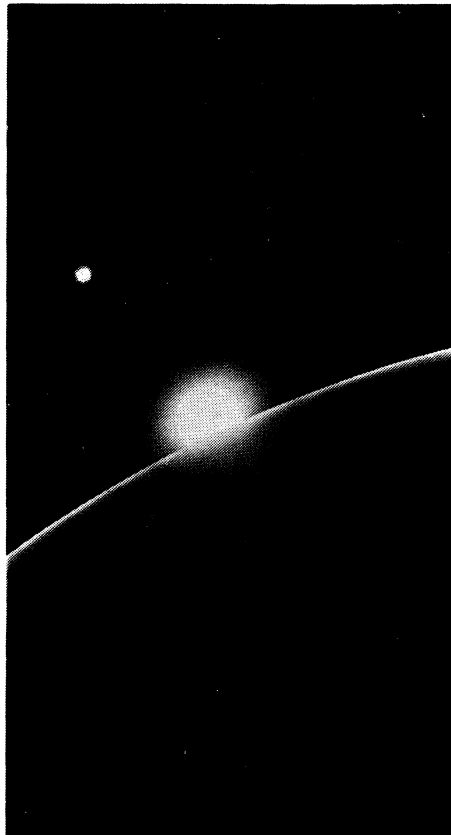
GRAVITY/MASS: Europa's mass and gravity haven't changed. Io's gravity is .11, slightly

less than before. Jupiter lost some mass in the explosion so its gravitational field is slightly reduced. However, because Jupiter shrank so much, its surface gravity is now over 50 times that of Earth's.

DIMENSIONS: Europa has the same diameter as before. Io's diameter is slightly smaller and more irregular than it was. Jupiter's diameter has shrunk drastically; it is only 20% of what it used to be.

COMPOSITION: Europa shows signs of complex molecules and a measurable level of chlorophyll. Io is still high in sulfur. Jupiter is now mostly hydrogen and helium; at its core, these elements are undergoing fusion because of the extreme pressure and heat.

After completing the above experiments, any astronomer may try to either identify or calculate the Nova's effects. When an astronomer's check is successful, read the following boxed text.



Jupiter has become a miniature star, and its moons have become miniature planets. Io lost some of its mass in the explosion. The water on the surfaces of Europa and Ganymede turned to vapor. Both moons now have atmospheres.

When the crew calls mission control to report their findings, they receive some good news. Tensions have lessened between the United States and the Soviet Union, and peace talks are scheduled in Geneva.

9.2 BOWMAN'S LAST VISIT

Run this encounter only if the PCs have not come to the conclusions that Jupiter has become a star and Europa is now a habitable planet, with life on it. This encounter takes place as the crew sits around the table in the ward room.

Suddenly, David Bowman appears in the room. A nebulous cloud of light floats beside him. He looks just as he did when he left Earth 9 years ago. As he stands before you, his appearance wavers—as if he were growing old one second, then becoming young again the next.

Bowman says to you calmly, "Do not let the governments of Earth land on Europa. The new life there is fragile, and the monoliths will protect it. Let the symbol of Jupiter as a new sun guide the Earth into peaceful times. It is time for HAL and me to go." The image of Bowman and the cloud of light disappear.

9.3 EPILOGUE

The Soviets put the Americans into the hibernacula. The Americans will spend the next 2 years there as the Leonov makes its way back to Earth.

A new, double dawn rises over Earth.

CHAPTER 10: EUROPA

10.1 INTRODUCTION

Just after the Leonov entered the Jupiter system, the ship's sensors detected strange readings from Europa. Europa is one of Jupiter's moons. Table 3 on the inside cover lists Europa's physical data.

The characters may want to investigate the strange readings. There are two ways they can learn more about Europa: they can launch a remote probe or they can send a manned expedition to Europa. Section 10.2 below explains sending a remote probe, and section 10.3 covers sending a manned expedition.

Tanya recommends that they launch a remote probe before sending a manned expedition. She doesn't want to endanger any lives if a probe can do the job. However, she will agree with the Americans if they propose to send a manned expedition first.

The characters must be in a ship in the same hex Europa is in (on Map. 8) before they can launch a remote probe or send a manned expedition to Europa. Remember that Europa is in orbit around Jupiter. Keep track of where Europa is by moving a planet counter around its orbit on Map 8. Table 4, on the inside cover, lists how fast Europa moves.

When a remote probe or manned expedition reaches Europa, the characters find something. What they find is determined by what the Leonov first detected on Europa (your result from Table 5 in chapter 1). After using section 10.2 or 10.3, use section 10.4 if a magnetic field was detected; use section 10.5 if a radio signal was detected; use section 10.6 if chlorophyll was detected.

The strange readings came from a round impact crater, 1 kilometer wide. Most of the crater floor is smooth ice. A 100-meter-wide maze of ice swells, dips, walls, and obstacles fills the center of the crater. Hidden under the center of the maze is an ice cave.

What the characters find is in the ice cave. The cave was formed by a meteor impact. Several years ago, a red-hot meteor blasted through the ice, causing bubbles of steam to rise up. Water around the bubbles froze almost instantly, forming a series of

connected spherical chambers leading down into the ice.

A concealed opening in the ice maze leads into the first cave chamber. That chamber is the largest, 20 meters wide. A 3-meter-wide hole in the floor leads down to the next chamber, only 15 meters wide. In all, there are four chambers, one on top of another. Each leads down to the next through a circular hole. Each chamber can only be seen from the chambers above and below it because the holes do not line up. The second chamber is quite dim; the lower chambers are pitch black.

The bottom chamber is the smallest, only 5 meters across. The meteor that formed the cave is under the floor there, forming a mound. Through the ice, the meteor appears as dark rectangular shape, similar to a monolith.

Unknown to the characters, the cave is shelter for an unidentifiable primitive life form that resembles a gay-green mass of plants. These creatures usually live beneath the ice. Occasionally, one finds a gap in the ice and moves to the surface. One of these creatures lives in the ice maze around the cave. During the day, it lies on the ice, soaking up light. When darkness falls, it seeks out the shelter of the ice cave.

10.2 SENDING A REMOTE PROBE TO EUROPA

The Leonov carries two remote probes. See p. 22 in the Knight Hawks Campaign Book for information about these probes. The Leonov's probes must be controlled by an operator on the Leonov. Uri Svetlanov is the only crew member trained to operate them. He must use his piloting skill (increase maneuver rating) to accomplish fancy maneuvers. Other pilots can fly the probes, but must make their skill checks with a -20 modifier. The probe controls are in the computer bay.

The Leonov's probes carry special TV cameras that are linked to the Leonov's computers. The computers produce an enhanced image of everything the cameras see on a screen in the computer bay.

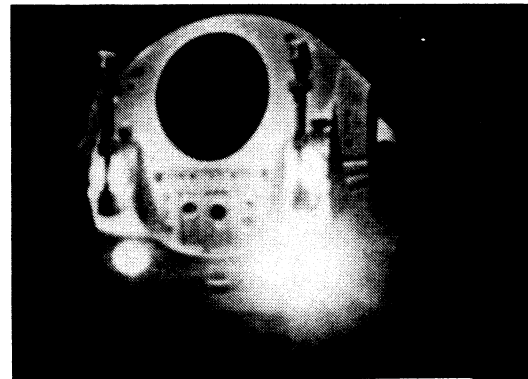
A probe requires 1/2 hour to reach

Europa. Uri can fly it to the crater without difficulty. When the probe reaches the crater, all the Americans and most of the Russians should gather in the computer bay to watch the screen as the probe flies down to the surface. Uri lands the probe slowly, near the center and asks for suggestions as to what to do next.

After 10 minutes of searching, the probe's sensors lock onto strange readings, similar to those the Leonov detected. If the probe searches for the reading's source, it eventually finds the ice cave.

The probe can enter the first chamber, but cannot pass through the hole to the next chamber. Uri can tell this right away. If other characters persuade Uri to try to enter a lower chamber, the attempt damages the probe—its cameras are knocked out of focus and cannot be fixed.

Continue with section 10.4, 10.5, or 10.6.



10.3 SENDING A MANNED EXPEDITION TO EUROPA

GETTING READY

See p. 30 in the Knight Hawks Campaign Book for information about workpods. The Leonov has three workpods that Max and Curnow can modify to fly to Europa, land someone, then return him to the Leonov. Before the characters can use a pod this way, Max and Curnow must spend 2 hours modifying it. There is a two-person workpod on the Discovery that can also be used.

A system navigator must successfully plot a course for a workpod before the flight. Any character can operate a workpod, but must make a successful Dexterity check to land, take off, or accomplish fancy maneuvers.

The players must decide who will go on the expedition. Dr. Orlov wants to go, and Tanya will allow him to go, if there is room. Neither Tanya or Irina will leave the Leonov.

Each character can take a standard spacesuit with a helmet light, 25 meters of rope, a compass, a toxyrad gauge, anchors, and extra spacesuit patches. Each workpod is equipped with four mechanical arms, a radio, TV cameras, spotlights, and a winch (without cable). Characters can choose other equipment to take with them. Each pod can carry three of the items listed in Table 7.

THE TRIP AND THE LANDING

The trip from the Leonov (in orbit around Europa) to the crater takes 1/2 hour. A character who makes his landing Dexterity check lands in the crater without difficulty. A character who fails his landing Dexterity check must make a Reaction Speed check. If that check is good, he has a very rough

landing, but nothing is damaged. If that check fails, he crashes, destroying his pod and all its equipment. The character inside the pod suffers 20 points of damage, but his spacesuit is not damaged.

A character whose pod is destroyed is stranded on Europa. If the players don't think of a way to rescue a stranded character, Tanya radios the following suggestions. The stranded character can ride back in the Discovery's two-man pod, if there is only one other person in it. Also, a stranded character can be tied to the outside of a pod for the ride back to the Leonov. If character is tied to a pod, all that pod's equipment must be abandoned.

Continue with section 10.4, 10.5, or 10.6.

10.4 MAGNETIC FIELD DETECTED

The meteor in the lowest chamber has a very strong magnetic field. Coincidentally, the magnetic field resembles that of the monolith discovered on Earth's moon.

REMOTE PROBE

When the probe enters the first chamber, it's instruments clearly show that it is directly over the source of the magnetic

field. The probe is pulled down toward the floor. Uri can still control it, but with great difficulty. When the probe leaves the cave, go to section 10.7.

MANNED EXPEDITION

As characters descend into the cave's lower chambers, the tug of the magnetic field becomes stronger. When they enter the lowest chamber, all iron and steel equip-

TABLE 7. EXPEDITION EQUIPMENT

(Items marked with an asterisk contain enough iron or steel to be attracted to the magnetic meteor in setion 10.4.)

Geiger Counter*: detects and identifies radiation.

Magnetic Tracer*: detects and locates magnetic sources.

Computer Link: links the workpod's equipment to the Leonov's computers (or HAL) and allows the computers to analyze data from the equipment.

Radio Tracer*: detects and locates radio sources.

Vacuum Thermite: produces extreme heat when detonated.

Winch Cable*: 25 meters of cable capable of supporting 10 tons.

Pick Axe*: chops through ice, anchors ropes, aids climbing on ice.

Flood Lamp: illuminates a circular area 25 meters wide; comes with a stand.

Siesmograph: detects, locates, and analyzes moonquakes.

Metal Detector*: detects and identifies metal through solid non-metal objects.

Gravity/Mass Detector: detects and locates high density objects and determines the mass of objects.

Cutting Laser: burns through ice and light metal up to three meters away.

Explosive: produces shock waves for geologic tests. Makes craters up to 5 meters across and 2 meters deep.

Spectrograph: analyzes light waves and chemical composition of hot gases.

Infra-red Viewer: locates objects that are a different temperature than their surroundings.

Chemical Analyzer: identifies the rough chemical composition of solids, liquids, and gases.



Europa photo courtesy of NASA

LEFT. Possible evidence of life is detected on Europa, a Jovian moon.

FAR LEFT. A workpod travels to Europa on an exploration mission.

ment is pulled to the mound where it remains stuck. The spacesuits themselves contain no iron or steel. A total of 100 Strength points are needed to pull something off the mound and carry it up to the next chamber. A workpod's winch can easily pull equipment off the mound, if a cable is carried down into the cave.

A careful examination of the mound reveals that a natural meteor is beneath it. As the characters leave the cave, go to section 10.7.

10.5 RADIO SIGNAL DETECTED

Many years ago, Japan attempted to put a satellite, the "Soaring Butterfly," into permanent orbit around Jupiter. Soon after the satellite entered the Jovian system, it ceased transmitting and was never heard from again. The Japanese assumed that the satellite malfunctioned and was destroyed crashing into Jupiter.

The satellite did malfunction. However, it crash-landed in the crater on Europa. Not long afterward, the meteor blasted through the ice near it. The steam bubbles of the ice cave formed around the satellite.

The satellite is now in the cave's second chamber. The satellite's tiny nuclear generator is still producing electricity, although the generator leaks low levels of radiation. The satellite's transmitter continually broadcasts meaningless signals. The signals are too weak to be picked up beyond the Jupiter system.

REMOTE PROBE

As the probe approaches the cave, it detects low levels of radiation. When the probe enters the cave, a small portion of the crippled satellite becomes visible. No matter how the characters maneuver the probe, they cannot see enough of the satellite to recognize what it is, although it is obviously a machine of some kind. The probe can tell that the machine is the source of both the radio signals and the radiation.

When the probe leaves the cave, go to section 10.7.

MANNED EXPEDITION

As the characters approach the cave, their toxyrad gauges indicate the presence of low level radiation. Characters who stay within 20 meters of the satellite for more than 1 hour suffer 5 points of damage from the radiation every hour they remain near the satellite.

Dr. Orlov and Dr. Floyd recognize the satellite's markings as Japanese. The Leonov's computers (or HAL) can provide a complete history of the satellite up until it stopped transmitting.

The characters can remove the satellite from the cave if they spend 2 hours melting and chopping ice to enlarge the hole between the first and second chamber. A workpod winch can haul the satellite up out of the cave. However, none of the pods are strong enough to take off with the satellite.

As the characters leave the cave to return to the Leonov, go to section 10.7.

10.6 CHLOROPHYLL DETECTED

Like all plants, Europa's primitive life form contains chlorophyll. When the creature that lives in the maze and ice cave moves, it leaves a faint chlorophyll trail that remains detectable on the ice for several days. The Leonov detected the chlorophyll.

REMOTE PROBE

There is a strong, fresh trail of chlorophyll in the first chamber. The trail leads down into the lower chambers. While the probe examines the chamber, the cameras catch a slight movement for only a second in the lower chamber. No matter how long the probe watches the hole to the lower chamber, it detects nothing more.

When the probe begins to leave the ice cave, go to 10.7.

MANNED EXPEDITION

If the characters go all the way to the lower chamber, they discover the mound in the floor and the dark, rectangular shape beneath it. Although the shape looks like a monolith beneath the ice, careful examination reveals that it is probably a meteor. If the characters chop or melt the ice away, they confirm that the shape is a meteor.

As the characters leave the cave, go to section 10.7.

10.7 EUROPA CONCLUSION

REMOTE PROBE

Suddenly, there is a blur of motion on the very edge of the monitor screen. Something moved in the lower chamber! All the Russians yell at once for Uri to turn the probe around. Uri quickly

swings the cameras around and snaps on the spotlights. For just a second, a large gray-green mass is visible in the lower chamber. A moment later, the screen erupts in a blinding flash of light, then fills with static.

Uri can tell instantly that not only are the cameras not functioning, the entire probe is not responding. The probe's last transmission indicated the grey-green mass as the chlorophyll source.

At the same time the probe was destroyed, the Leonov's energy sensors and external cameras detected a flash of lightning that traveled from the crater on Europa to Jupiter. The Russians all insist that the electrical discharge was a natural occurrence. Some honestly believe that, but others, including Tanya, are unwilling to admit that a powerful alien force may exist.

MANNED EXPEDITION

As you leave the ice cave, you notice a movement about 30 meters away in the maze. Then, you see a large gray-green mass move past a crack in a large ice wall.

Suddenly, the ice under your feet begins to vibrate and shake. Small cracks begin to open up in the ice all over the crater. Blocks of ice from the ice walls in the maze fall down and shatter. The pieces fly out slowly in the low gravity.

A moonquake is occurring. Five minutes after it begins, a geyser erupts from the cave area. The water shoots up 50 meters, then begins to fall back slowly. Most of the water freezes before it reaches the ground. Then, large chunks of ice break off from the frozen geyser and fall down.

Characters who leave the maze area immediately get away safely. Characters who stay near the cave or pursue the grey-green mass are crushed by falling ice.

The quake does not damage the pods, and ends 1 hour after it began. When it is over, the entire crater floor is smooth. A few jagged shards of ice litter the center area, but the maze and cave are gone.

Dr. Orlov, the environmentalist, and the computers can find no reason for the geyser to have occurred. Still, all the Russians insist that it was an untimely, but natural, occurrence. Some honestly believe that. Others, including Tanya, are unwilling to believe that something consciously prevented them from finding an alien life form.

PREGENERATED CHARACTERS

NEW SKILLS

Astronomy Skill

*This is a new STAR FRONTIERS® technological skill.

Characters with this skill are called astronomers. They are scientists who study the universe; specifically outer space, galaxies, stars, planets, moons, asteroids, comets, and meteors.

This skill has two subskills: identify and calculate. Astronomers must make observations to perform either subskill. Astronomers use telescopes, radar, energy sensors, cameras, and computers to make their observations. Each type of equipment astronomers use to make their observations adds 10% to their success rate.

IDENTIFY

Success Rate: $10 \times \text{skill level} + \text{equipment}$

Astronomers can identify objects in space, from planets to space ships. Identifying takes one-half hour for objects closer than 10,000 kilometers. Objects further away require 1 hour to identify.

CALCULATE

Success Rate: $10 \times \text{skill level} + \text{equipment}$

Astronomers can calculate the age, speed, mass or orbit (course) of any object in space. Astronomers can only make one calculation at a time. Each calculation takes one-half hour.

System Navigation Skill

**This is a new spaceship skill for use with this module only.

In 2010, interstellar travel and jumps

through the void do not exist. All space travel, except a few unmanned probes, is limited to the solar system. This skill has one subskill: plot course.

PLOT COURSE

Success Rate: $40\% + 10 \times \text{skill level} - 10\%$ per hour less than required plotting time

Navigators make the complicated calculations required to plot a safe and accurate course for a spaceship. The time needed for course calculations increases for longer trips, because even small errors become very serious as the distance increases. The required plotting time is one hour per 100,000 kilometers that will be traveled. Navigators can cut the required plotting time in half by using large computers such as HAL or the computer at mission control to help make their calculations.

If the navigator spends less than the required plotting time, his success rate is reduced. Every hour of the required plotting time the navigator does not spend reduces his success rate by 10%.

If a navigator fails his plot course roll, he must start over.

Politics

**This is a new biosocial skill for this module only.

This skill has two subskills: Empathy and Persuasion. These subskills are exactly the same as the Psycho-Social subskills Empathy and Persuasion. Politicians cannot use any other Psycho-social subskill.

COLONEL TANYA KIRBUK, Cosmonaut
Commander of the UNCOS Leonov and its soviet crew, pilot of the UNCOS Leonov.

RACE: Human SEX: female
STR/STA: 35/45 AGE: 37
DEX/RS: 55/60 IM: 6
INT/LOG: 65/60 CURRENT
PER/LDR: 60/70 STAMINA:

Special Abilities: None

Skills: Pilot 6, Technician 4, System Navigation ** 4, Politics ** 3, Computer 2

Pilot 6

Tanya is the best space pilot in the Soviet Union. This makes her one of the best pilots on Earth. She can operate almost any vehicle made on Earth from helicopters and airplanes to space shuttles and experimental interplanetary ships. She can pilot the Leonov and any of its workpods.

Technician 4

Captain Kirbuk can build and repair sophisticated machines. She has been trained extensively with the equipment aboard the Leonov.

System Navigation ** 4

Tanya is not the navigator aboard the

Leonov. However, as the pilot, she is extremely familiar with the job. In an emergency she can plot courses and determine the location of the ship.

Politics ** 3

Tanya is the captain of the Leonov. This job entails more than just giving orders and piloting the ship. Tanya has learned how to deal with people and bureaucracy, especially in the Soviet Air Force.

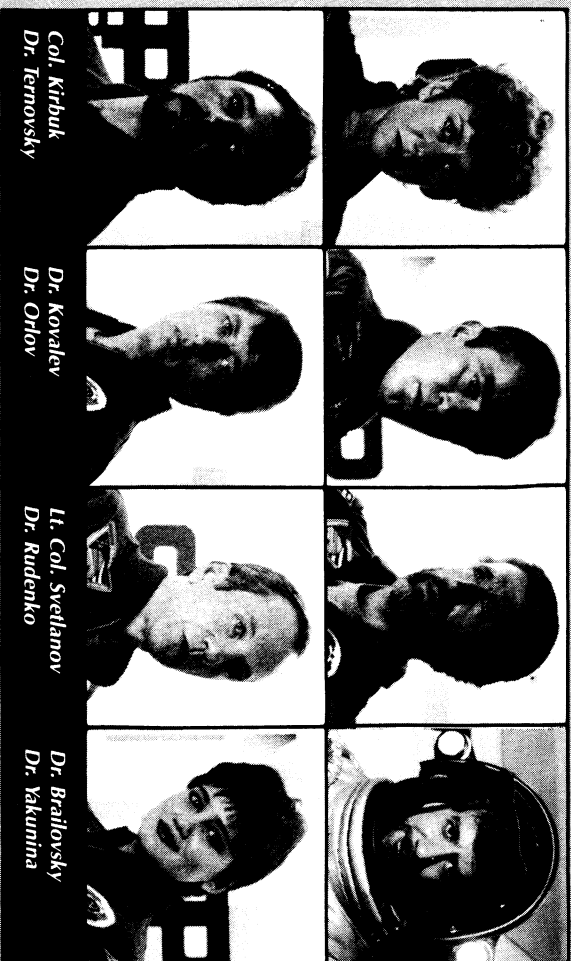
Computer 2

Pilots need to operate computers. Tanya is experienced with the Leonov's computers. She can program them for low-complexity tasks.

LT. COLONEL URI SVETLANOV, Cosmonaut

First officer (second in command) of the UNCOS Leonov and its soviet crew, co-pilot of the UNCOS Leonov.

RACE: Human SEX: male
STR/STA: 50/55 AGE: 29
DEX/RS: 55/55 IM: 6
INT/LOG: 50/65 CURRENT
PER/LDR: 45/50 STAMINA:



Col. Kirbuk
Dr. Ternovsky

Dr. Kovalov
Dr. Orlov

Lt. Col. Svetlanov
Dr. Rudenko

Dr. Brailovsky
Dr. Yakunina

Special Abilities: None

Skills: Pilot 5, Technician 4, Computer 4, System Navigation** 3

Pilot 5

Uri is the Leonov's co-pilot. Uri is an accomplished pilot, both in spacecraft and in aircraft. There are better pilots in the Soviet Union, but Uri was chosen for this job because of his loyalty to the state. He can fly the Leonov and its workpods.

Technician 4

Uri is skilled with machinery and can build or repair complex equipment. He is extensively trained with the equipment aboard the Leonov.

Computer 4

His duties as co-pilot require Uri to operate and program the flight computers on the Leonov.

System Navigation** 3

Uri Svetlanov is a capable navigator. If, for any reason, both Ternovsky and Kirbuk are unable to navigate, Uri can navigate the Leonov.

DR. VASILI ORLOV, Cosmonaut

Astrophysicist, third in command of the UNCOS Leonov and its Soviet crew.

RACE: Human SEX: male
STR/STA: 40/40 AGE: 42
DEX/RS: 50/45 IM: 4
INT/LOG: 70/65 CURRENT
PER/LDR: 60/60 STAMINA:

Special Abilities: None

Skills: Environmental 5, Astronomy* 4, Technician 3, Computer 2

Environmental 5

Vasili specializes in non-Earth environments and ecosystems. He is widely recognized as the world expert on possible life in the solar system.

Astronomy* 4

Dr. Orlov is one of the military's leading astronomers in the Soviet Union. He has a Ph.D. in astrophysics and astrophysics.

Technician 3

As a physicist and astronomer, Dr. Orlov has learned to build and repair lightweight machinery.

Computer 2

Vasili is familiar with computers and can program them to suit his needs in most cases.

DR. MAXIM BRAILLOVSKY, Cosmonaut

Space engineer of the UNCOS Leonov, former olympic gymnast.

RACE: Human SEX: male
STR/STA: 60/65 AGE: 26
DEX/RS: 70/70 IM: 7
INT/LOG: 40/60 CURRENT
PER/LDR: 65/35 STAMINA:

Special Abilities: None

Skills: Spaceship Engineering 5, Technician 5, Computer 3

Spaceship Engineering 5

Max is the chief engineer of the Leonov. He is an expert at manipulating the ship and its engines. He knows his ship's limits, and how to repair it.

Computer 3

As the chief engineer of the Leonov, Max is very capable at using computers.

Technician 5

Max is an expert at building, modifying, and repairing machines.

DR. MIKOLAI TERNOVSKY, Cosmonaut

Control and guidance officer of the UNCOS Leonov.

RACE: Human SEX: male
STR/STA: 50/50 AGE: 30
DEX/RS: 55/50 IM: 5
INT/LOG: 50/60 CURRENT
PER/LDR: 40/45 STAMINA:

Special Abilities: None

Skills: System Navigation** 6, Computer 4, Technician 3

System Navigation** 6

Mikolai is an expert space navigator. He can plot courses anywhere in the solar system.

Computer 4

A navigator does most of his work on a computer. Ternovsky is a very capable computer operator and programmer.

Technician 3

Ternovsky is capable of building, modifying or repairing any control or guidance system aboard the Leonov. He is not as familiar with the rest of the ship.

DR. ALEXANDER KOVALEV, Cosmonaut

Communications officer of the UNCOS Leonov.

RACE: Human SEX: male
STR/STA: 35/45 AGE: 44
DEX/RS: 50/45 IM: 5
INT/LOG: 55/65 CURRENT
PER/LDR: 50/55 STAMINA:

Special Abilities: None

Skills: Technician 3 (6 with communications and detection equipment), Computer 3, System Navigation** 2

Technician 3

With communications and detection equipment, Dr. Kovalev's skill level is 6. Dr. Kovalev can modify or repair any communications equipment made in the Soviet Union and most equipment manufactured elsewhere. He is an expert in the use of radios, radar, energy sensors, intercoms, and jamming equipment.

Computer 3

Dr. Kovalev is especially experienced with communications computers. He can operate and program them for most of his needs.

System Navigation** 2

Alex is familiar with space navigation. In an emergency he can plot a course for the Leonov.

DR. PETRI RUDENKO, M.D., Cosmonaut

Surgeon and chief medical officer of the UNCOS Leonov.

RACE: Human SEX: male
STR/STA: 45/50 AGE: 38
DEX/RS: 60/50 IM: 5
INT/LOG: 60/60 CURRENT
PER/LDR: 35/40 STAMINA:

Special Abilities: None

Skills: Medical 6, Technician 2, Computer 1
Medical 6

Dr. Rudenko is one of Earth's leading space physicians. He performed the first open heart surgery in zero gravity.

Technician 2

If necessary, Dr. Rudenko can repair his own medical equipment. Usually, he asks Max or Alex to give him a hand.

Computer 1

Computers are a necessary evil in Petri's job. He is not fond of them, but knows how to use them.

DR. IRINA YAKUNINA, M.D., Cosmonaut

Nutritionist and physical therapist of the UNCOS Leonov.

RACE: Human SEX: female
STR/STA: 40/45 AGE: 27
DEX/RS: 55/40 IM: 4
INT/LOG: 70/65 CURRENT
PER/LDR: 60/60 STAMINA:

Special Abilities: None

Skills: Medical 3, Technician 2, Computer 1
Medical 3

Irina is the Leonov's health and nutrition expert. She controls the diet and exercise routine of the crew. She can establish a physical therapy exercise routine to restore someone to full health after surgery or an injury. Irina can administer drugs or perform minor surgery if necessary.

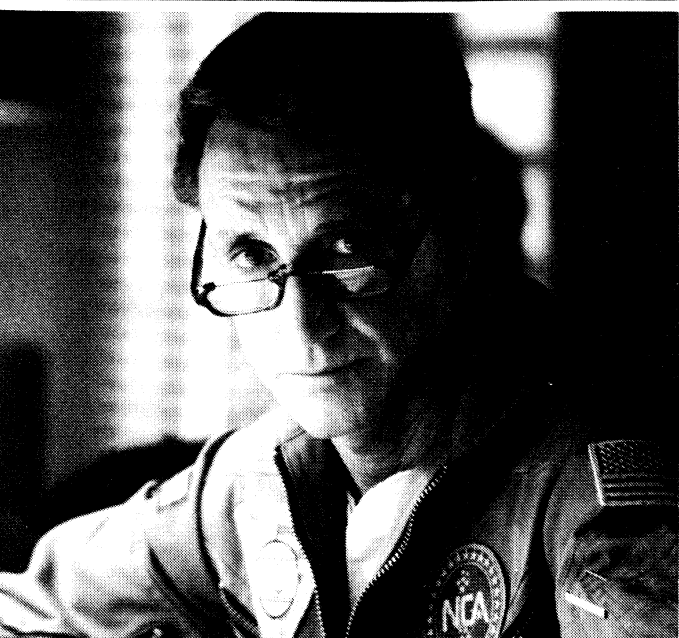
Technician 2

Irina maintains the physical therapy and medical equipment on the Leonov.

Computer 1

Dr. Yakunina has a minimum of experience with computers. She can run her nutrition and physical therapy programs and call up related information.

FLOYD



DR. HEYWOOD FLOYD

Astronaut

Commander of the USA contingent on the UNCOS Leonov, premier monolith expert, world-renowned astronomer and diplomat.

RACE:	Human	SEX:	male
STR/STA:	40/45	AGE:	51
DEX/RS:	55/40	IM:	4
INT/LOG:	70/65	CURRENT	<input type="checkbox"/>
PER/LDR:	60/60	STAMINA:	<input type="checkbox"/>

Special Abilities: None

Skills: Astronomy* 6, Politics** 5, Computer 2, Technician 2

*New STAR FRONTIERS® skill; described under "PREGENERATED CHARACTERS."

**New skill for this adventure; described under "PREGENERATED CHARACTERS."



DR. HEYWOOD FLOYD

Astronomy* 6

Heywood received a Ph.D. in astrophysics from Stanford University. He has been one of the world's foremost astronomers for two decades.

Politics 5**

Dr. Floyd is the former chairman of the National Council of Astronautics (NCA). He resigned in 2001 under political pressure after the Discovery's flight ended in disaster. However, he is still a world-renowned diplomat for the NCA. Dr. Floyd is currently on leave as chancellor of the University of Hawaii.

Computer 2

Dr. Floyd is familiar with computers. This is a vital skill for most scientists, especially astronomers. The computers aboard the Leonov are Russian and use the Cyrillic alphabet. Dr. Floyd cannot use them without help from a Russian crew member.

Technician 2

Like most astronomers, Heywood is capable of building and maintaining telescopes and other simple machines. He can repair some of the less complex equipment on board the Leonov and Discovery.

Dr. Floyd is the world's leading expert on the monoliths. However, despite numerous theories, very little is known about the monoliths.

Floyd carries two special pieces of equipment. One is a tiny power cut-off switch. Once installed in the circuit breaker room on the Discovery, this switch can instantly disconnect the ship's computer, HAL. Floyd's other device looks like a normal calculator. It can activate the cutoff switch by remote control. It also allows Floyd to decode secret messages from mission control.

CHANDRA



DR. CHANDRA

Astronaut

HAL 9000 restoration engineer, world's leading computer scientist, Professor of Computer Science at the University of Illinois in Urbana.

RACE: Human SEX: male

STR/STA: 35/40 AGE: 41

DEX/RS: 45/40 IM: 4

INT/LOG: 55/70 CURRENT

PER/LDR: 30/35 STAMINA:

Special Abilities: None

Skills: Computer 6, Technician 3, Robotics 2



DR. CHANDRA

Computer 6

Dr. Chandra designed the HAL (Heuristic Algorithmic) 9000 computer aboard the Discovery. HAL is the world's only artificially intelligent machine. HAL is self-aware, and has a personality. He can think, learn, create, and may even feel some emotions. Dr. Chandra is not subject to HAL's -20 penalty (See HAL Awakens).

Dr. Chandra is Earth's leading expert on computers and artificial intelligence. He can operate and program any computer built on Earth.

The computers aboard the Leonov use the Cyrillic alphabet which hinders Dr. Chandra when he uses them. On the Leonov's computers, Dr. Chandra's computer skill is only level 4.

Technician 3

Chandra is good at working with machines. He can build and repair machines of medium complexity. His specialty is computers and silicon chip technology.

Robotics 2

Dr. Chandra is quite familiar with the robotics industry. In a sense, HAL is a robot because HAL can operate the Discovery and control most of its equipment.

CURNOW



DR. WALTER CURNOW

Astronaut

Discovery restoration engineer, chief engineer of the Discovery II, second in command of the USA contingent on the UNCOS Leonov.

RACE: Human SEX: male

STR/STA: 55/50 AGE: 43

DEX/RS: 60/45 IM: 5

INT/LOG: 60/65 CURRENT

PER/LDR: 70/55 STAMINA:

Special Abilities: None

Skills: Spaceship Engineering 6, Technician 5, Astronomy* 4, Computer 3

*New STAR FRONTIERS® skill; described under "PREGENERATED CHARACTERS."

DR. WALTER CURNOW



Spaceship Engineering 6

Walter is one of earth's leading spaceship engineers. He is in charge of designing and building the spaceship Discovery II. Dr. Curnow's job is to restore the Discovery to working order.

Technician 5

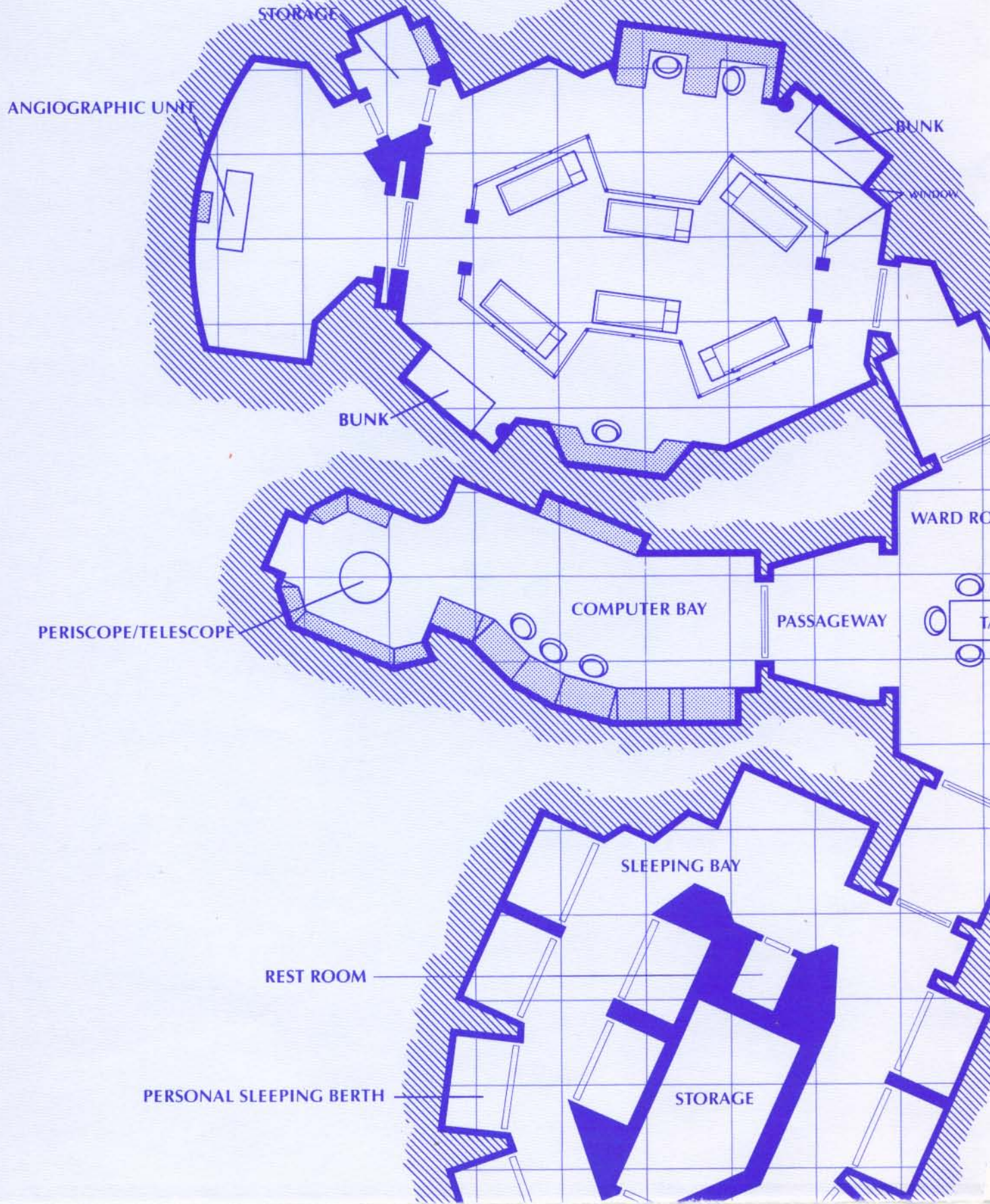
Several years ago, Curnow's technician skill was level 6. But after he moved into management positions, his skill decreased to level 5. However, he is extremely familiar with the Discovery; he is still a level 6 technician for Discovery equipment.

Astronomy* 4

As the chief engineer of one of Earth's first interplanetary space ships, Dr. Curnow has a broad background in astronomy.

Computer 3

Walter uses computers in his everyday work. He is adept at accessing information and designing and running analytical programs.



UNCOS LE

GENERAL PLANS SHEET 1

ENGINEERS:

Contra Smith Bruce Nestor

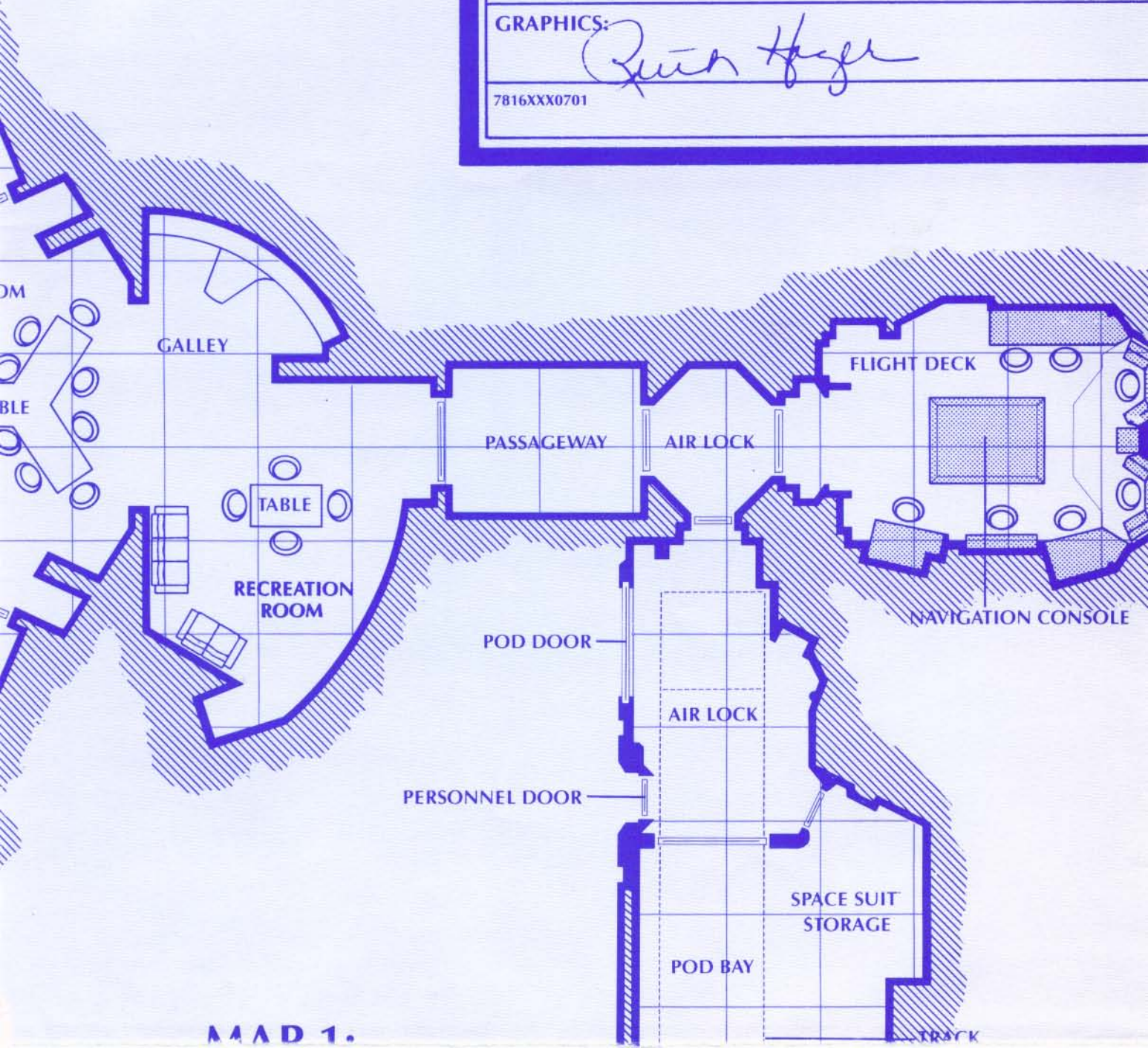
DRAFTSMAN:

PIESEL

GRAPHICS:

Quinn Hager

7816XXX0701



MAD 1.

ONOV & USS DISCOVERY

SCALE: 1 SQUARE = 2 METERS

Smith



REGULAR DOOR



AIR TIGHT DOOR



LADDER



HATCH IN FLOOR OR CEILING



CONTROL CONSOLE



HIBERNACULUM



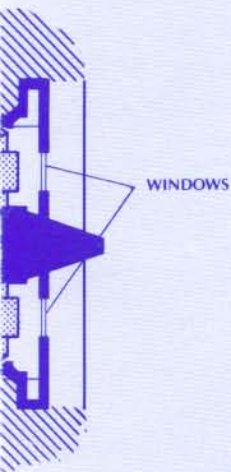
CHAIR



LOUNGE CHAIR

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MAP 2: USS DISCOVERY — SIDE VIEW

MAP 6
UPPER DECK

MAP 5
COMMAND DECK

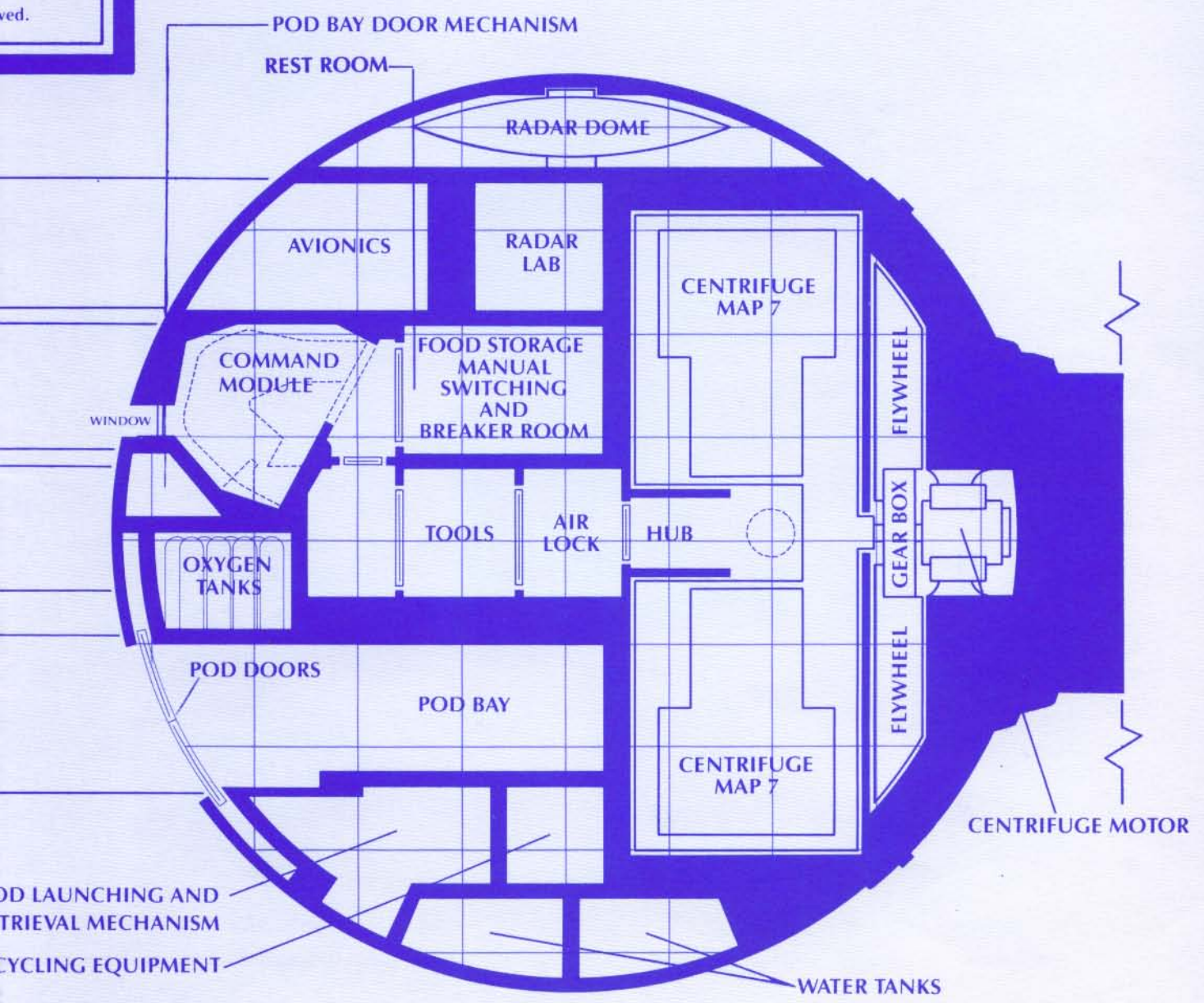
MAP 4
CENTRAL DECK

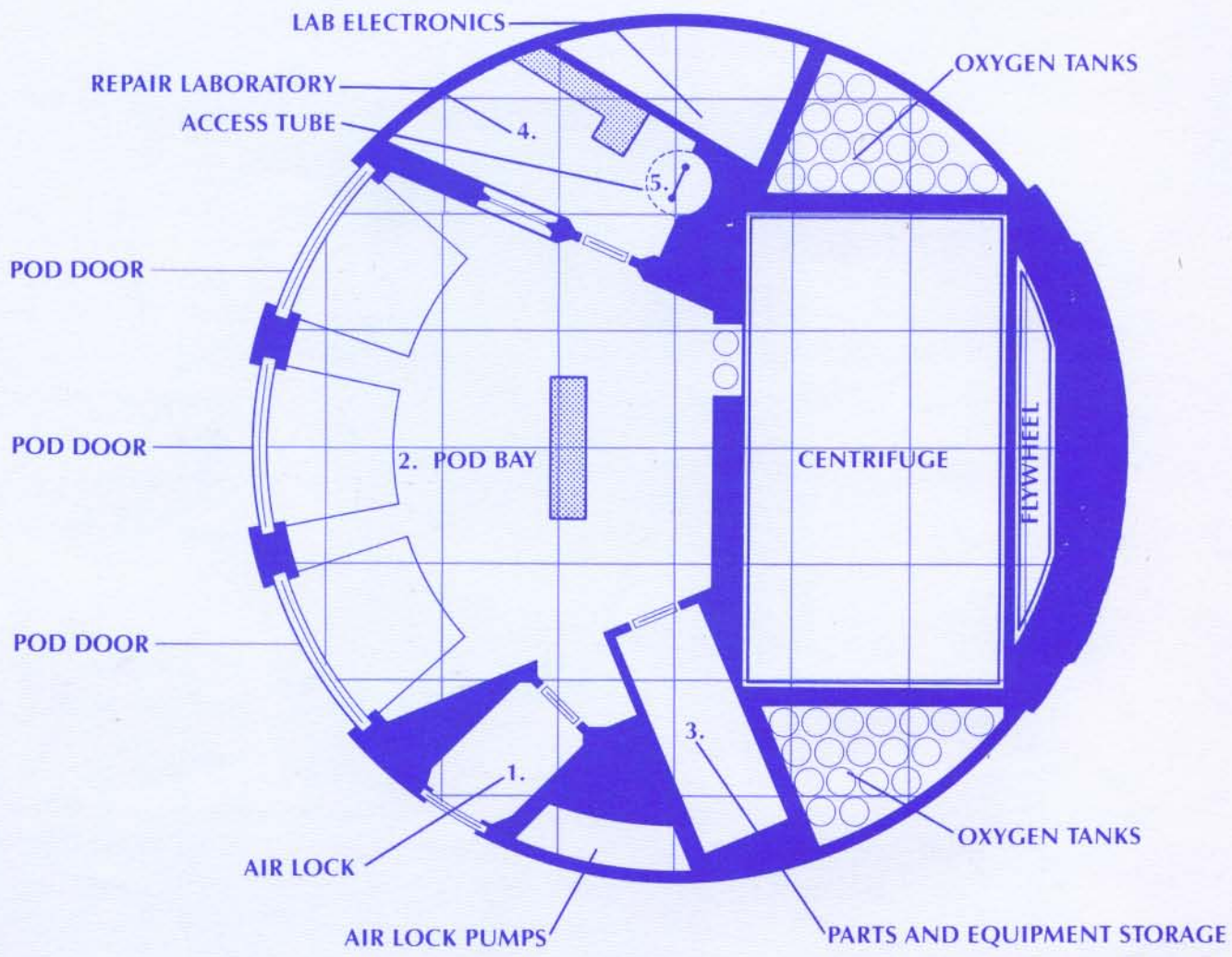
MAP 3
LOWER DECK

P
R
RE

RS

ved.



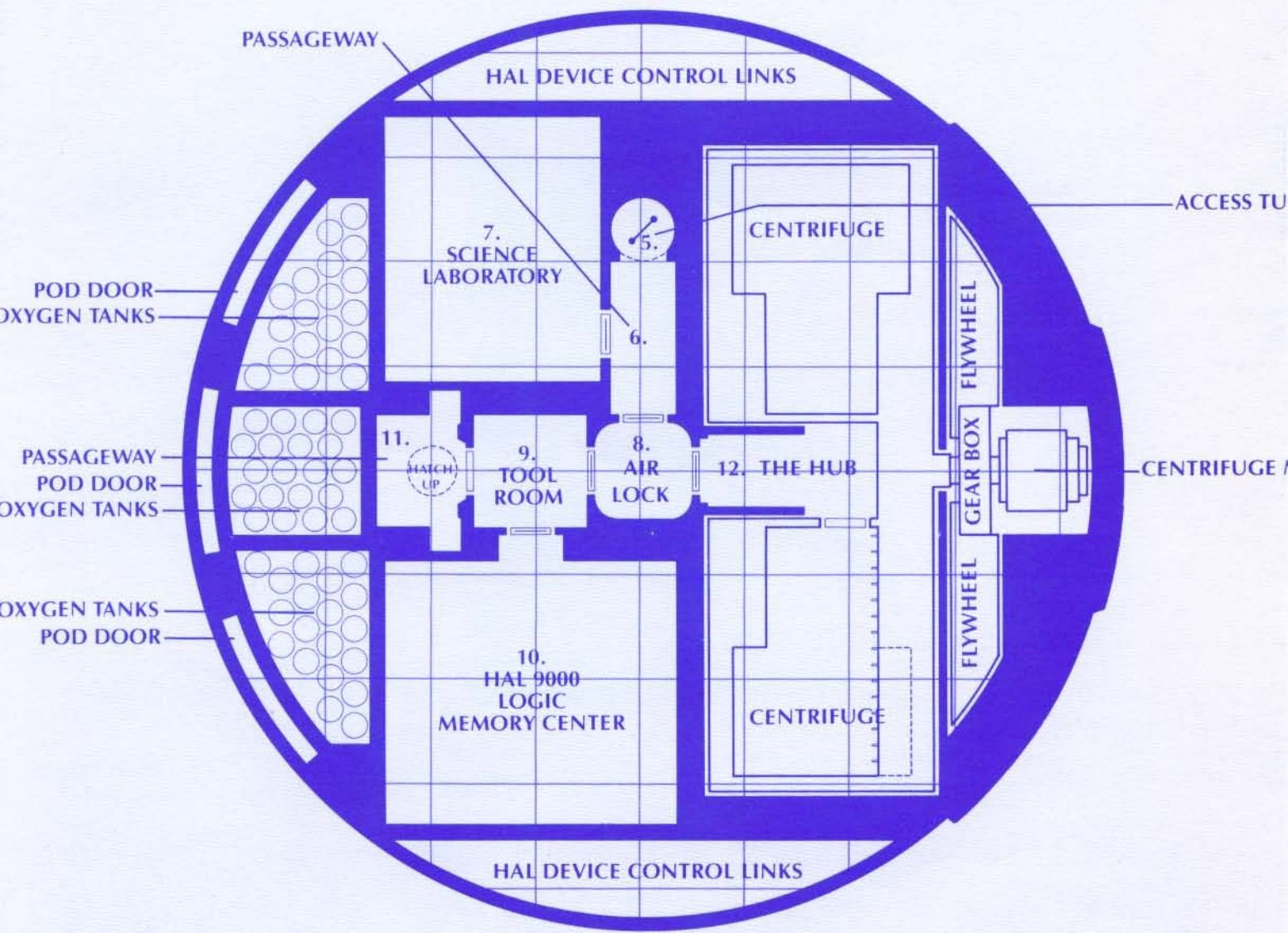
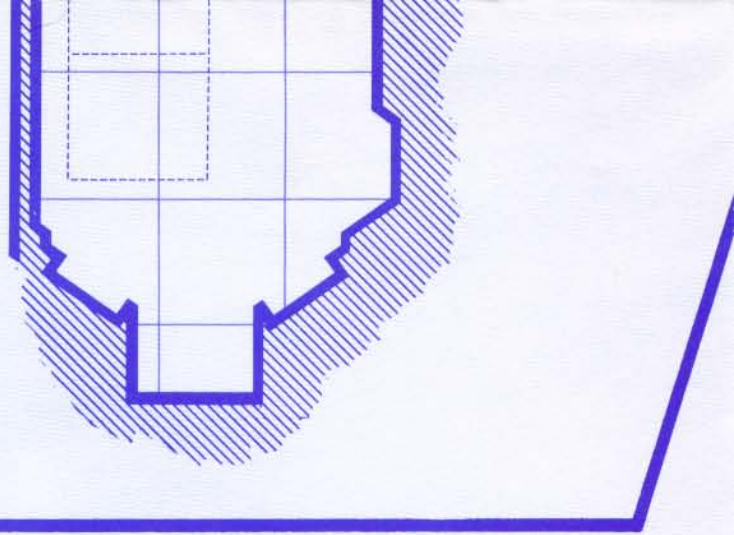


MAP 3: LOWER DECK—FLOOR PLAN

7816XXX0701

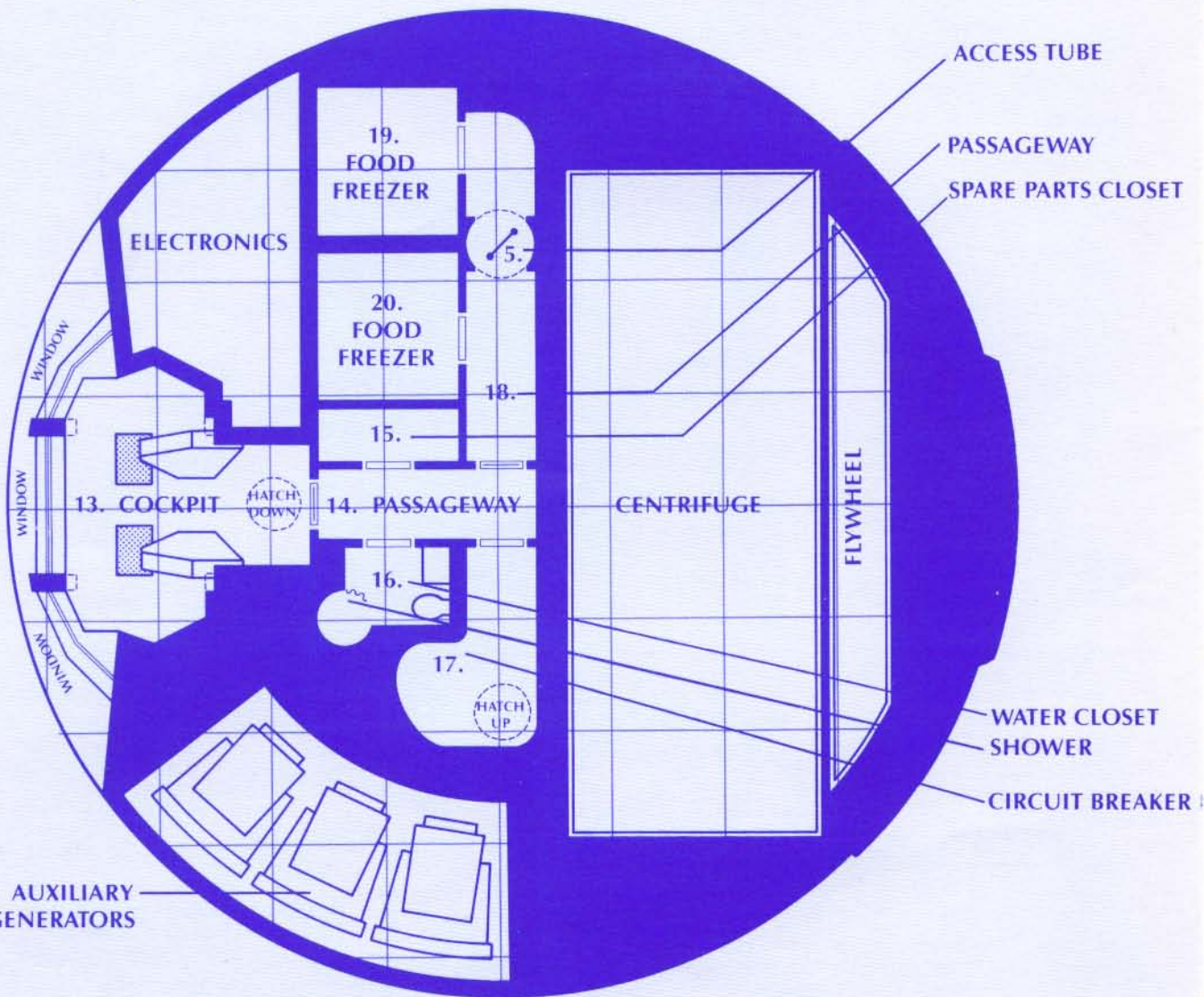
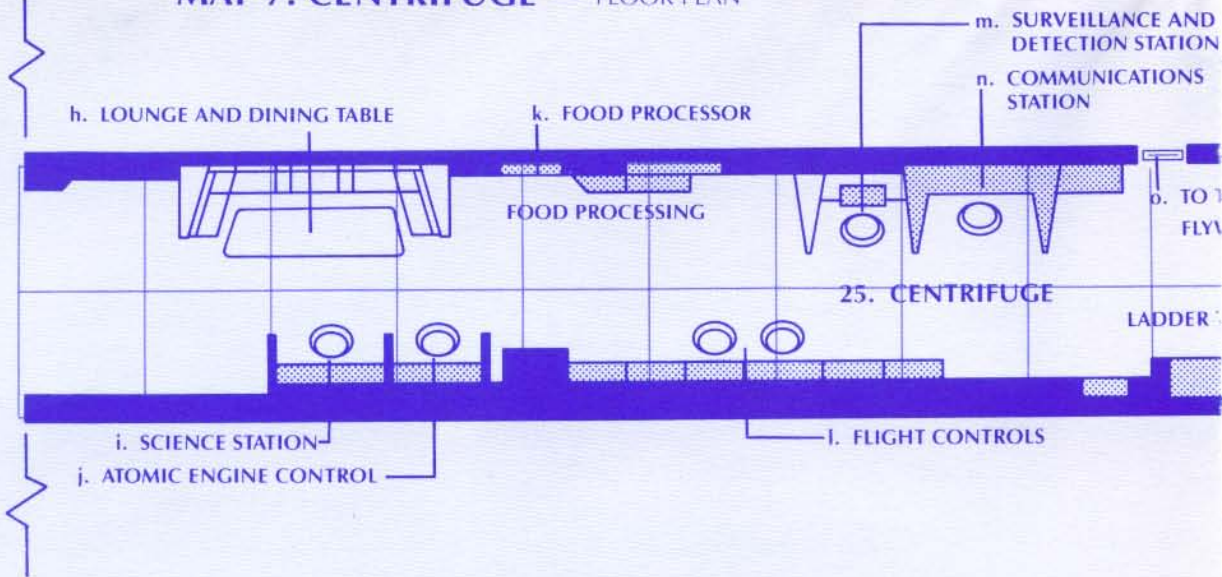
MAP 4: UNCOS LEONOV FLOOR PLAN

OUTER HULL NOT SHOWN

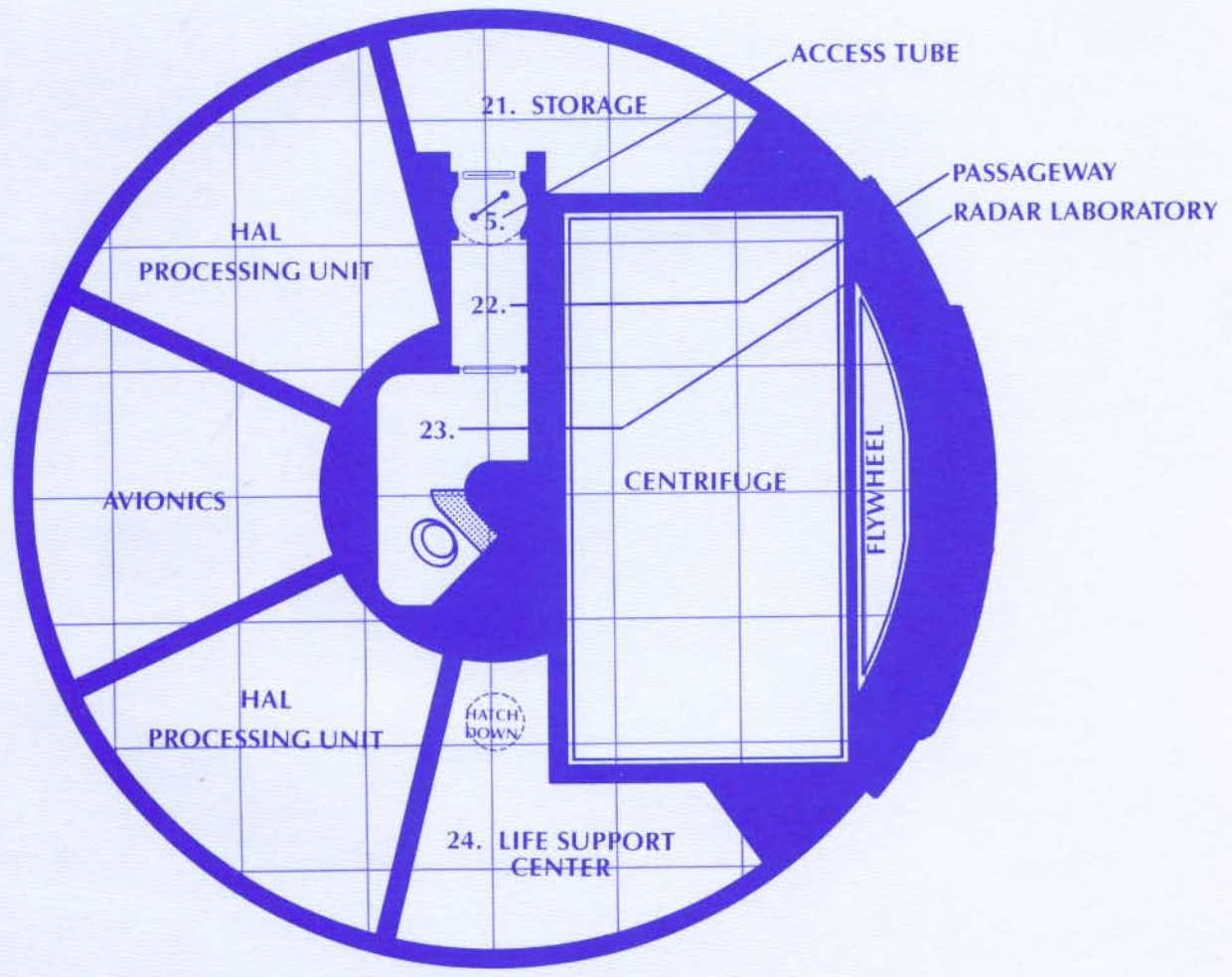
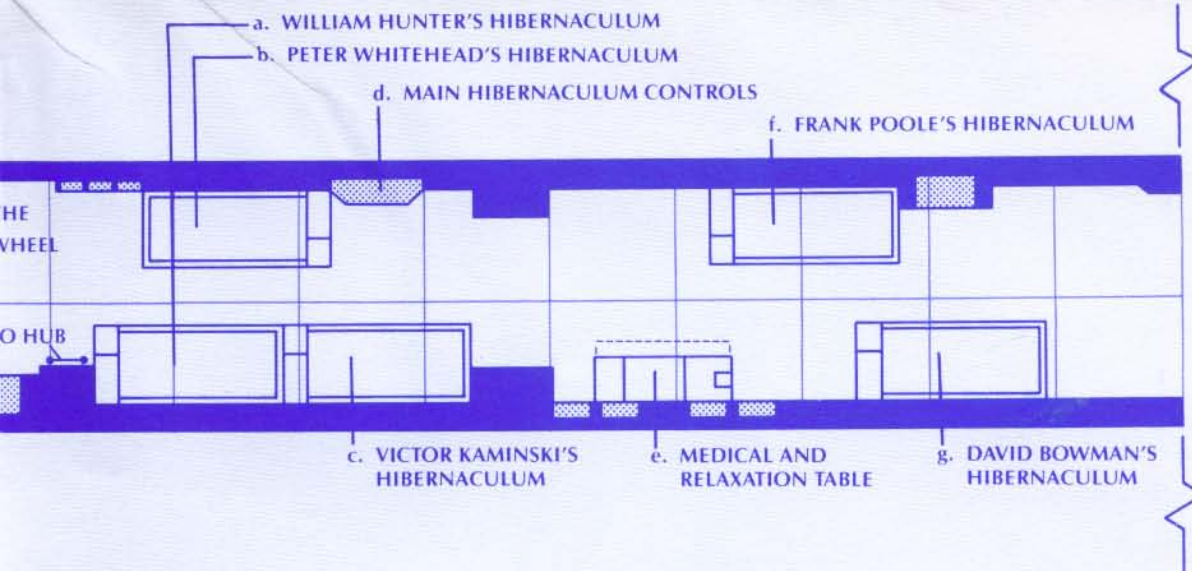


MAP 4: CENTRAL DECK — FLOOR PLAN

MAP 7: CENTRIFUGE — FLOOR PLAN



MAP 5: COMMAND DECK — FLOOR PLAN



MAP 6: UPPER DECK — FLOOR PLAN

MAP 8. JUPITER SYSTEM

SCALE: 1 hex = 100,000 kilometers
(10 times normal KNIGHT HAWKS Scale)

TABLE 1. JUPITER PHYSICAL DATA

Mass	317.2 times Earth
Diameter	143,000 kilometers
Orbit around Sun	11 years, 10 months
Distance from sun	778 million kilometers
Gravity*	2.64
Escape Velocity	60 kilometers/second
Composition	Hydrogen, Helium, and Methane

TABLE 2. IO PHYSICAL DATA

Mass	1.5% of Earth
Diameter	3460 kilometers
Orbit around Jupiter	1 day, 18 hours
Distance from Jupiter	421,600 kilometers
Gravity*	.18
Escape Velocity	2.6 kilometers/second
Composition	Sulfuric compounds, silicates

TABLE 3. EUROPA PHYSICAL DATA

Mass	0.8% of Earth
Diameter	3130 kilometers
Orbit around Jupiter	3 days, 13 hours
Distance from Jupiter	670,900 kilometers
Gravity*	.14
Escape Velocity	2.1 kilometers/second
Composition	Water-ice, impurities, rock

* See optional gravity rules on p. 20 in the Expanded Game Rules.

TABLE 4. MOVING IO¹ AND EUROPA²

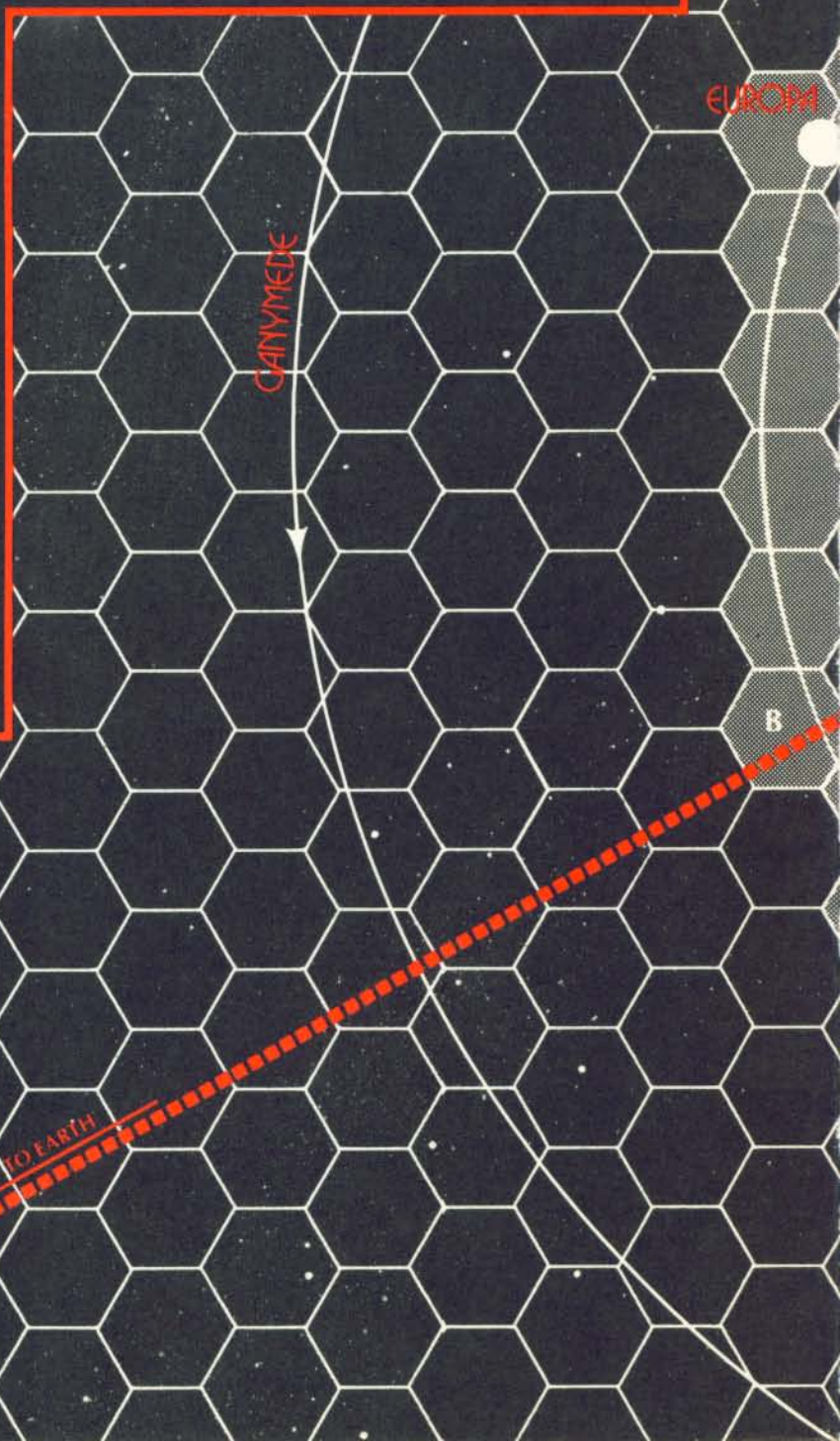
TIME	IO MOVES	EUROPA MOVES
6 hours	4 hexes	3 hexes
12 hours	8 hexes	6 hexes
24 hours	16 hexes	12 hexes

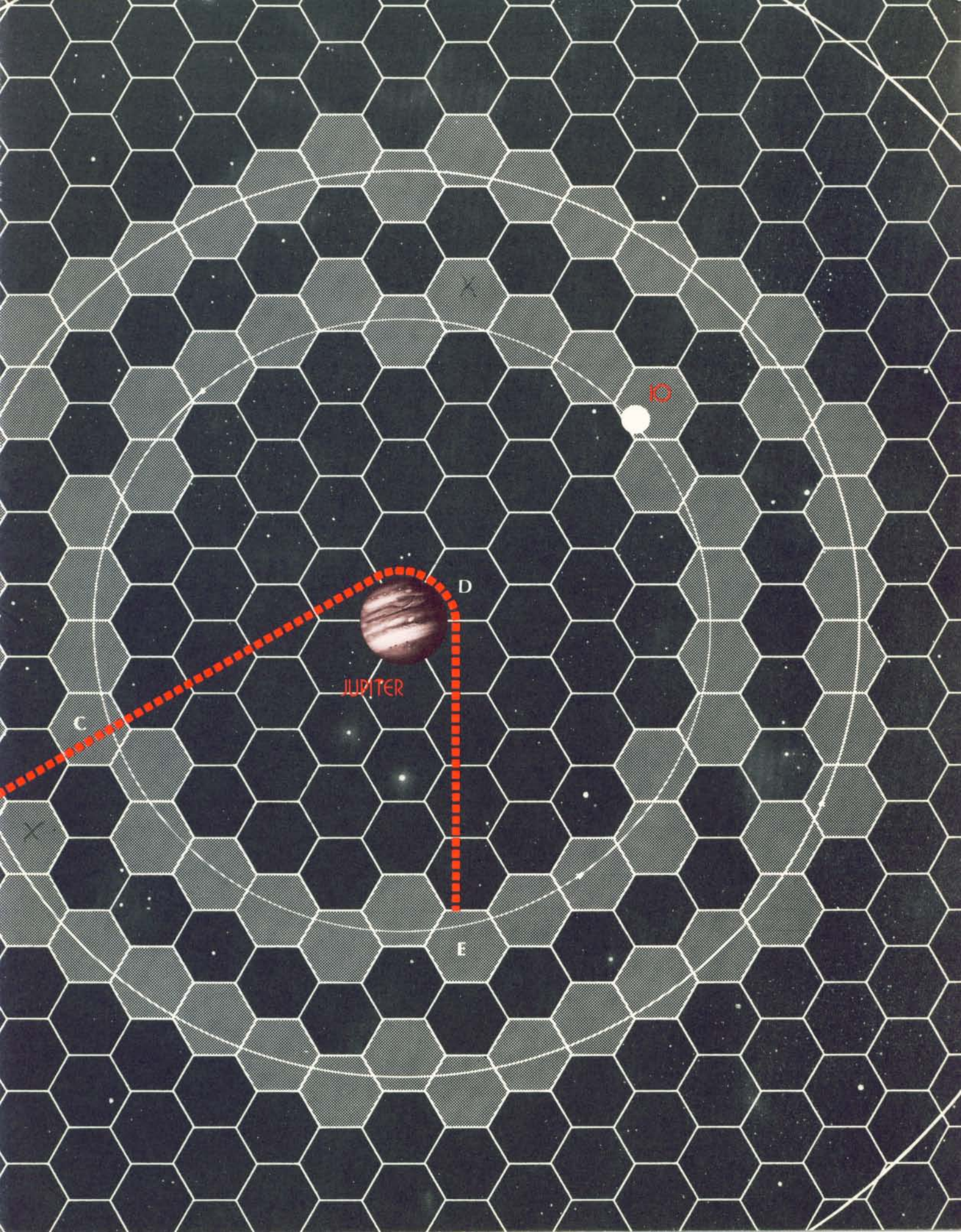
¹IO moves one hex every 1.5 hours (9 turns).

²Europa moves one hex every 2 hours (12 turns).

(All moons move counter clock-wise)

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2010

ODYSSEY TWO ADVENTURE

BY BRUCE NESMITH AND CURTIS SMITH

Seven-hundred million kilometers from Earth, an alien monolith glides silently above Jupiter. Thousand-meter-long plumes of flame and sulfur shoot up from volcanoes on a nearby moon, but never touch or scar the slab. Close by, the dark and lifeless spaceship Discovery tumbles end-over-end, abandoned since 2001.

Now, in 2010, your ship arrives to complete the Discovery's mission: solve the mysteries behind the monolith. You must also determine what happened to the Discovery's commander, who disappeared into the monolith nine years ago. Then, if it's possible, you must repair the crippled Discovery and restart HAL, the super-computer that murdered most of the Discovery's crew.

Unnoticed, the monolith stirs. It, too, has a mission, a mission prepared millions of years ago—and about to begin.

This module includes a large map sheet, pictures from the movie 2010, and new character skills!

This special STAR FRONTIERS® module requires both ALHA DAWN and KNIGHT HAWKS box sets.

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