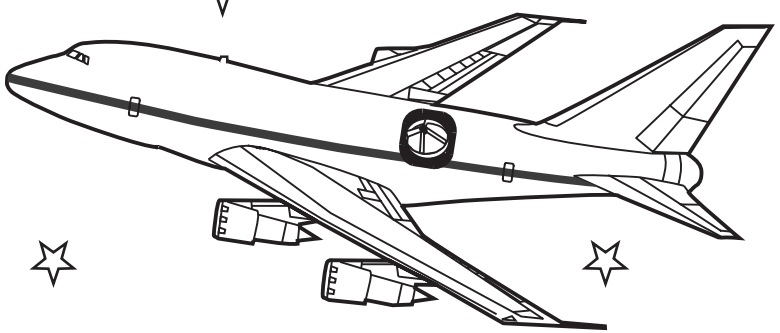
Welcome to the Stratospheric Observatory For Infrared Astronomy (SOFIA)

National Aeronautics and Space Administration



SCAN ME FOR THE ANSWER KEY!

SOFIA is the largest airborne observatory in the world. It carries a telescope that's nearly 9-feet wide inside a Boeing 747SP aircraft.

The SOFIA team needs your help to have a successful observation flight. Here are the activities to get us into the air:

1. Decide which objects SOFIA should observe (page 2).
2. Create a flight path (page 3).
3. Preflight (check) the SOFIA plane (page 4).

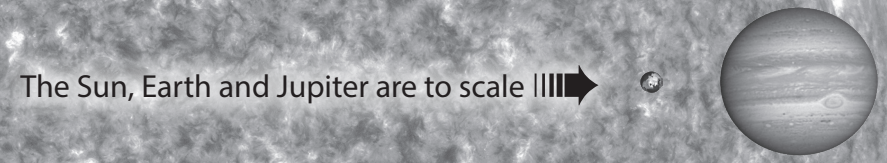
WORD SEARCH

C	K	T	J	P	P	W	I	O	Y	O	E	A
J	I	R	E	S	N	N	M	M	R	C	S	D
F	Y	R	V	L	F	B	O	F	N	G	R	E
V	S	U	E	R	E	N	S	E	U	A	E	M
O	H	T	A	H	O	S	I	Y	B	L	V	O
J	H	R	A	R	P	C	C	A	U	A	I	R
L	E	H	T	R	S	S	N	O	E	X	N	D
D	Y	S	G	N	S	S	O	T	P	I	U	N
Y	A	W	Y	K	L	I	M	T	U	E	G	A
B	L	A	C	K	H	O	L	E	A	S	Q	T
O	F	L	I	G	H	T	V	K	H	R	X	K
I	T	P	V	M	K	C	I	N	Q	M	T	N
Z	G	V	H	A	E	L	B	M	J	J	O	S

Find words that are a part of SOFIA's mission operation:

ANDROMEDA	ASTRONOMY	BLACK HOLE
FLIGHT	GALAXIES	INFRARED
MILKY WAY	SCIENCE	STARS
STRATOSPHERIC	TELESCOPE	UNIVERSE

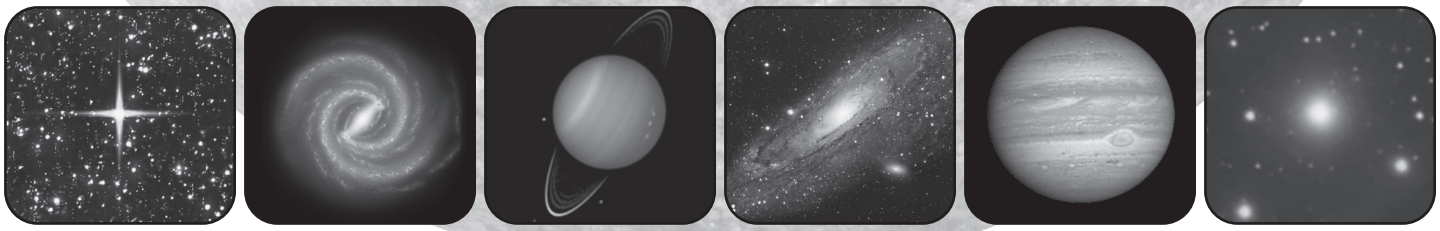
SOFIA's a unique observatory that studies stars, planets, galaxies, and black holes. Our Sun is a star, one of billions that shine bright. Sirius is the brightest star that shines at night. Then there's Canopus, Vega, Alpha Centauri. Enough about stars, there is so much more to see. Let's start with the planets, like Jupiter — the biggest planet in our solar system! Saturn is known for its thousands of rings. But Uranus, the 7th planet from the Sun, also has rings. They were discovered in 1977 by astronomers using an earlier flying telescope called the Kuiper Airborne Observatory. Our Solar System is located in the Milky Way galaxy, but SOFIA studies other galaxies too. Our closest galactic neighbor is Andromeda because it's NOT so far, far away. Other galaxies are millions of light years away. Some galaxies have black holes that are actively eating material from their surroundings. SOFIA is helping scientists learn more about them. Let's start to observe with SOFIA!



1. Which Objects Should SOFIA Observe Tonight?

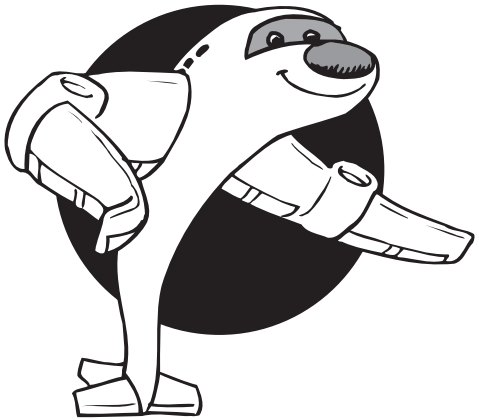
The SOFIA team would like to observe one planet, one star, and one galaxy tonight. Draw a line from each word to the pictures that match the word.

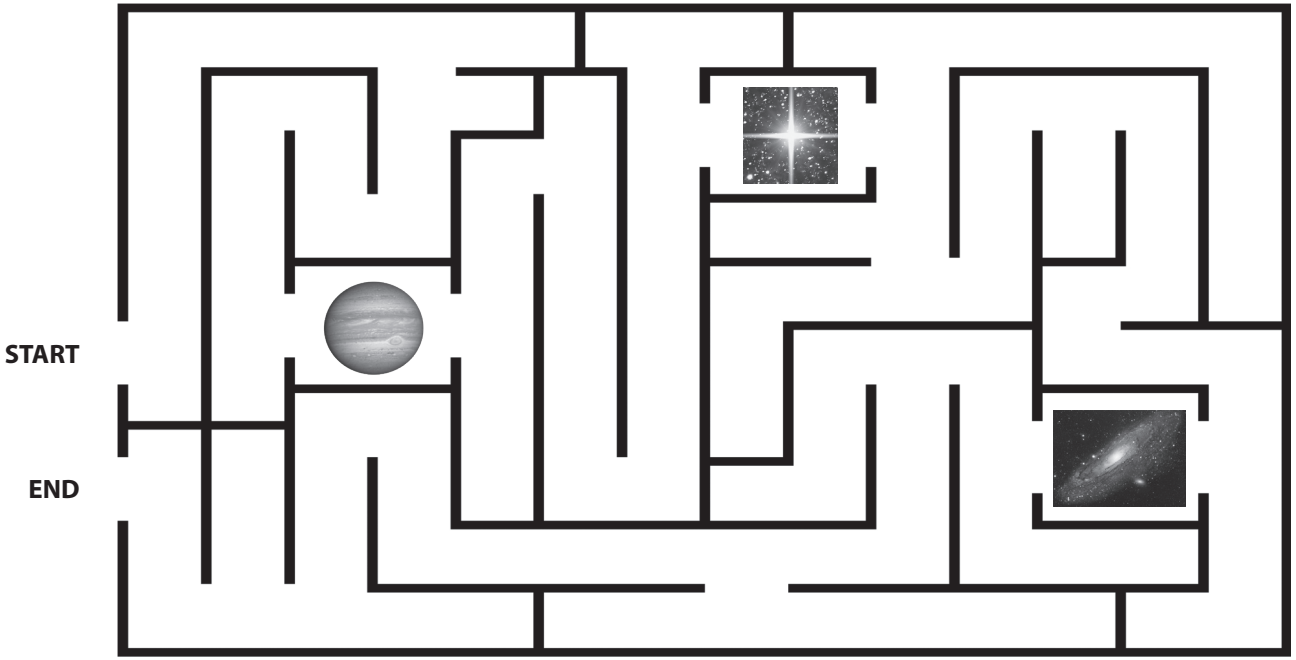
STAR **PLANET** **GALAXY**



SCAN ME FOR THE ANSWER KEY!

2. Create a Flight Path





Comet-ee Central

Astronomers can be pretty funny:

How do scientists freshen their breath?
With experi-mints!

What did one shooting star say to the other?
Pleased to meteor!

Why did Mickey Mouse go into space?
Because he wanted to find Pluto!

What kind of games do astronauts play?
Moon-opoly!

When is the moon the heaviest?
When it's full!

What songs do planets sing?
Nep-tunes!

What do planets read?
Comet Books!

How do you organize a space party?
You planet!

SCAN ME FOR THE ANSWER KEY!

3. Pre-Flight the SOFIA Plane

Before each and every flight, the SOFIA flight crew inspects the aircraft to ensure it is safe to fly. Can you identify the major structural parts of the flying observatory?

Cockpit: The pilot, copilot, flight engineer, and navigator sit here during flight.

Main Cabin: The main cabin is where the flight crew, mission operations staff, and scientists ride.

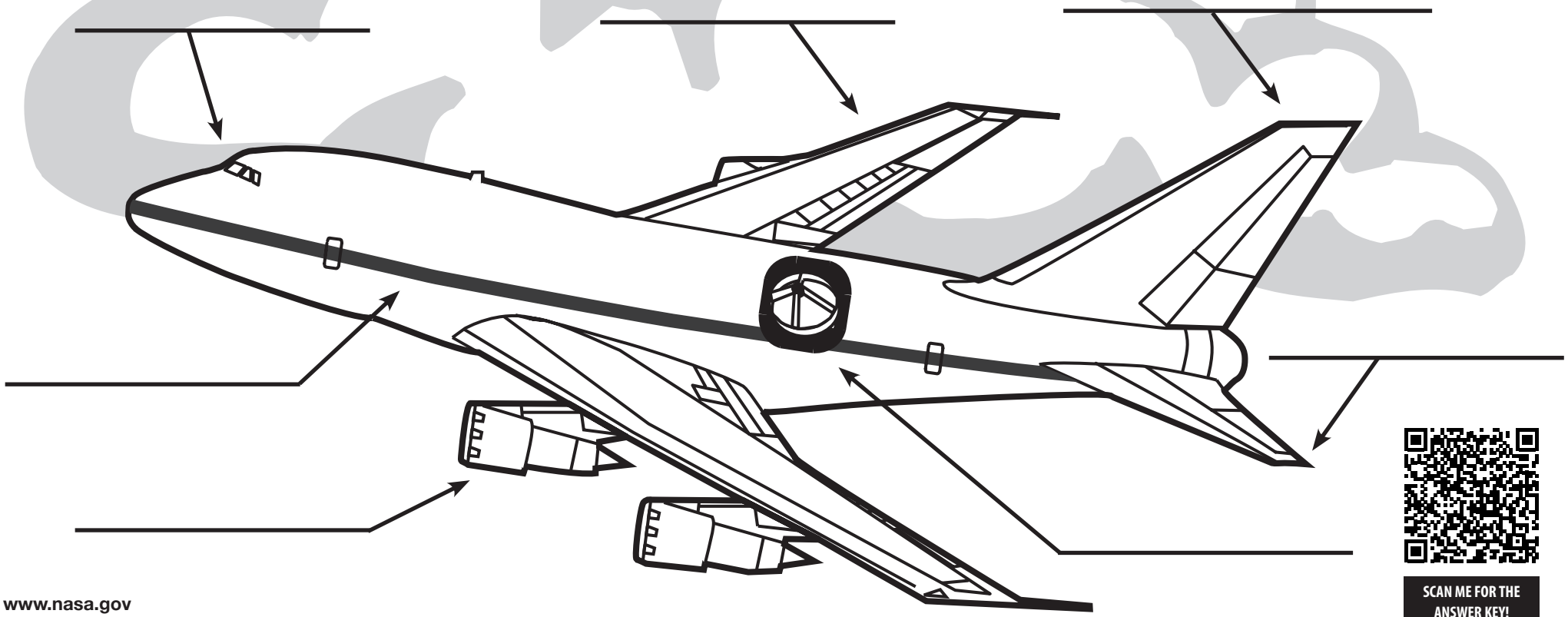
Wings: The wings hold SOFIA aloft to take science observations between 39,000 and 45,000 feet.

Engines: SOFIA is powered by four Pratt & Whitney JT-9D jet engines.

Vertical Stabilizer: The vertical stabilizer keeps SOFIA flying straight and true. The rudder is attached to the rear half of the vertical stabilizer.

Horizontal Stabilizer: The horizontal stabilizer keeps SOFIA's nose level while flying. The elevators are hinged to the horizontal stabilizer.

Telescope: SOFIA is fitted with a 2.7-meter (106-inch) infrared telescope that has been installed in the rear section of the fuselage.



SCAN ME FOR THE ANSWER KEY!