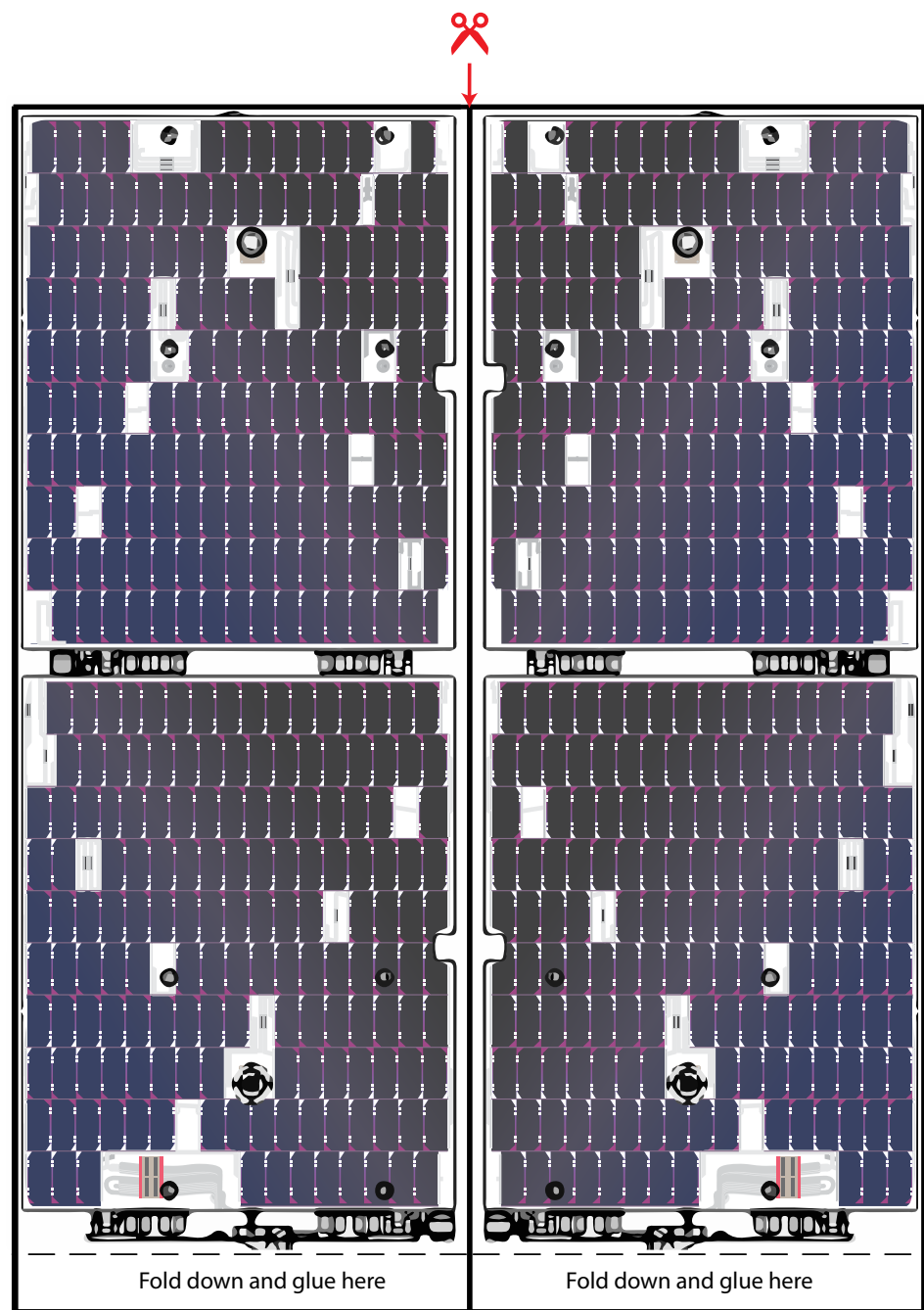


GPIM

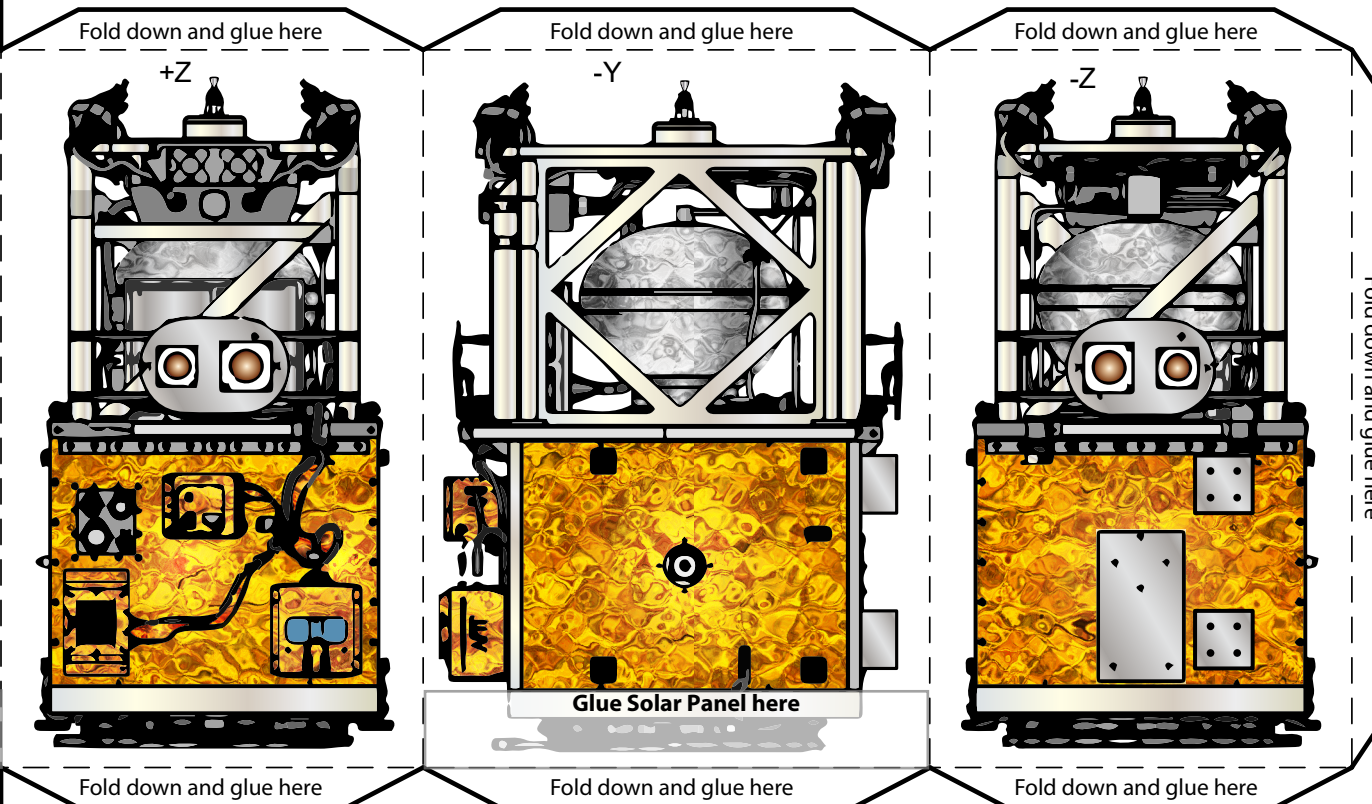
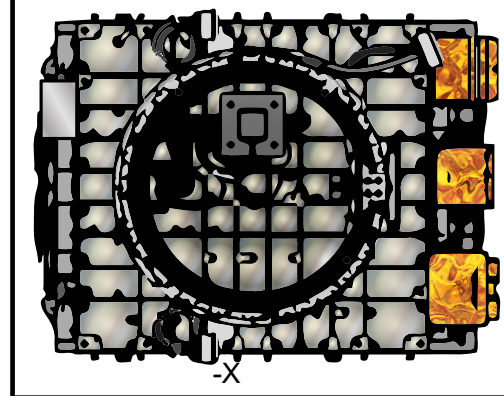
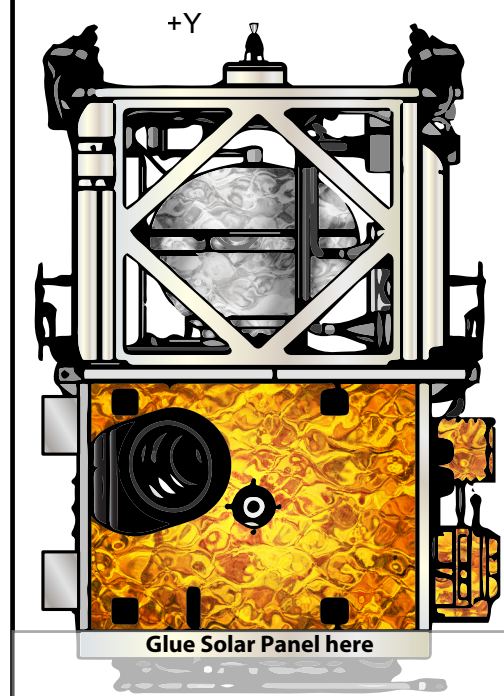
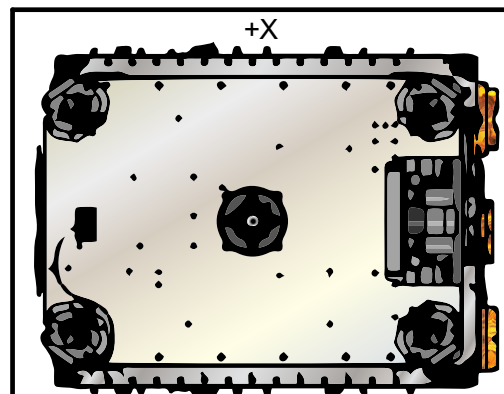
Green Propellant Infusion Mission

We use a propulsion system to move a spacecraft or push it up when Earth's gravity starts pulling it down. The propulsion engine (called a thruster) burns fuel, just like a car burns gasoline. Usually the spacecraft fuel is hydrazine, a highly flammable and poisonous chemical liquid. Technicians who fuel up the spacecraft must wear protective suits and handle the fuel very carefully.

For NASA's Green Propellant Infusion Mission (GPIM), Ball Aerospace engineers designed and built a spacecraft that burns a new fuel. This fuel is cleaner for the environment and safer to handle, and it will more efficiently fuel future spacecraft. GPIM launched on a SpaceX Heavy Falcon rocket in June 2019.



Solar Panels



Spacecraft Bus

Build Your Own GPIM Model (1/12th scale)

1. **Look** over the pattern to get an idea of what you'll be doing. Find the dashed lines and the heavy black lines around the model's edges.
2. **Score** all the dashed lines on both parts to make them easier to fold. To score, use a ruler and a ball-point pen or sewing needle. Line up the ruler along a dashed line, and then firmly draw back and forth along the ruler.
3. **Cut** out the bus along the heavy black lines using scissors.
4. **Fold** down the flaps on the bus that say "Fold down and glue here," but don't glue yet.
5. **Fold** down along the other dashed lines on the bus.
6. **Cut** out the solar panels and then fold the flaps.
7. **Glue or tape** the bus's flaps to close it up. If you're gluing, apply a very thin layer.
8. **Glue or tape** the solar panels to the bus where marked.

Materials Needed

- Ball-point pen or large sewing needle
- Ruler
- Scissors
- White glue, glue stick, or clear tape
- Print on 11x17-in. card stock for best results.

For more information:
www.nasa.gov/mission_pages/tdm/green/index.html
www.ball.com/aerospace/programs/gpim