

# The Astronauts' Day

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The astronauts' time is tightly scheduled, and their activities are closely followed by Mission Control (and by EarthKAM). This section will describe the astronauts' schedule which tells the astronauts what to do and when to do it.

How do the astronauts start their day?

The astronauts start their day just like people on Earth do, with a wake-up call. Their wake-up call, however, comes from Mission Control. They spend the next few hours getting ready for their day; they brush their teeth, get dressed, eat breakfast, and read "mail" sent up from Mission Control during the night.

How do the astronauts keep track of time?

What time zone are the astronauts in? The Space Shuttle moves so fast (once around the world in 90 minutes!) that it passes through a time zone in only about four minutes. To solve the problem of what time zone to use, the astronauts and mission control keep track of their own "Space Shuttle time." At the instant of launch, the Space Shuttle clocks begin keeping track of "Mission Elapsed Time" (MET): the amount of time that has passed since launch. The astronauts set their watches to this time, as does Mission Control in Houston. All events on the Space Shuttle are scheduled by MET.

MET is used extensively during EarthKAM operations on the Shuttle. To schedule EarthKAM photos, MET is expressed in days, hours, minutes, and seconds after launch in the following format:

days/hours:minutes:seconds (using two digits for each)

## EXAMPLE 1

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If the EarthKAM camera is scheduled to take a picture 2 days, 3 hours, 5 minutes, and 15 seconds after launch, that would be at a time:

MET 02/03:05:15

## EXAMPLE 2

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If the camera is scheduled to take a picture 17 hours, 26 minutes, 10 seconds after launch, that would be at:

MET 00/17:26:10



EarthKAM

How do the astronauts know who does what, when?

**The astronauts have hundreds of things to do during a Space Shuttle flight. Their schedules are worked out in detail months before launch, and published in what is called a Flight Plan. The Flight Plan is a detailed timeline; it tells each of the astronauts what to do, minute by minute, throughout the whole flight. The astronauts have copies of this Flight Plan on-board the Shuttle with them, and Mission Control has copies of the Flight Plan on the ground. During EarthKAM flights, EarthKAM operations are included in the official Flight Plan.**

Are the astronauts always in contact with Mission Control?

**No. There are short periods during each orbit when Mission Control can neither communicate with the astronauts, nor receive any data from the Shuttle. There are two main means of radio communication between the Shuttle and the ground: one via "S-band" and one via "Ku-band." (S-band and Ku-band are just parts of the radio frequency band, and refer to the type of antenna the Shuttle uses to receive them.) EarthKAM uses the Ku-band to send commands to the camera and to send the images back down to Earth.**

How do the astronauts end their day, and what happens when they are asleep?

**At the end of their work day, the astronauts have a few hours to relax, eat dinner, look out the window at Earth, and get ready to go to sleep. Mission Control doesn't bother them during this time.**

**On most flights all the astronauts sleep at the same time. While the astronauts are asleep, the Shuttle continues orbiting the Earth, and Mission Control continues its watch to make sure that nothing goes wrong.**

