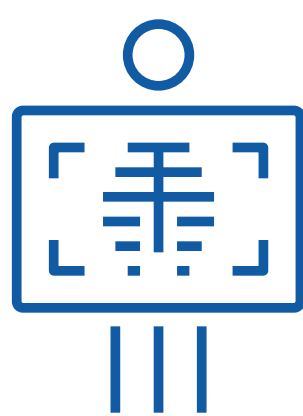




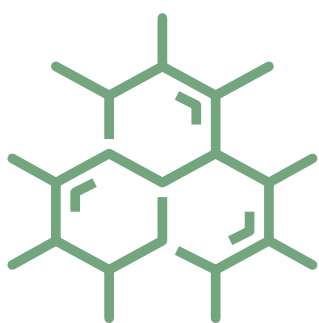
# 10 Ways Exploring X-rays in Space Makes Your Life Better on Earth

Exploring space brings benefits to us here on Earth. Technology developed for NASA's Chandra X-ray Observatory and other telescopes helps our lives in many different ways — from improved security at airports to medical advancements to more efficient manufacturing. By looking up, we improve today and make tomorrow even better. Explore some of the ways X-ray astrophysics impacts everyday lives on Earth.



## HEALTH SCANNING

From better mammograms to PTE scans, X-ray technology helps us identify health issues sooner to heal them more quickly.



## TREATING CANCER

One of the most important tools in fighting cancer is using X-rays to kill deadly cells before they can spread. X-ray technology originally designed for space improves this technique.



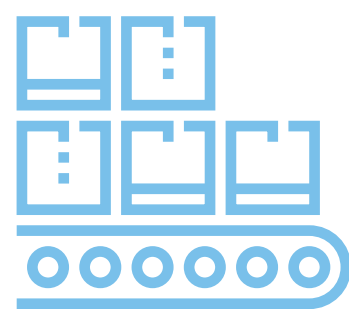
## MAKING BETTER MRIs

X-ray technologies have made Magnetic Resonance Imaging (MRI) machines — including the development of hand-held devices — better in diagnosing and treating health problems.



## DEVELOPING MORE EFFECTIVE MEDICATIONS

The biomedical and pharmaceutical industries use X-rays to see on very small scales with better sensitivity that helps speed up the development of life-saving drugs.



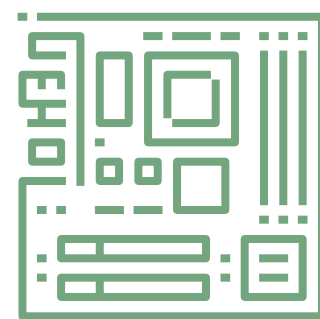
## MAKING MANUFACTURING MORE EFFICIENT

Quality controls that help make our manufacturing sector run — from airplane parts to canned food — have been improved by X-ray techniques.



## KEEPING AIRPORTS SAFE

The X-ray detectors used in airports to keep passengers safe were created and improved thanks to the exploration of space X-rays over decades.



## CREATING THE NEXT GENERATION OF SEMICONDUCTORS

X-ray lithography allows us to create incredibly tiny features on chips, allowing us to make better, more powerful devices in everything from cars to communication devices.



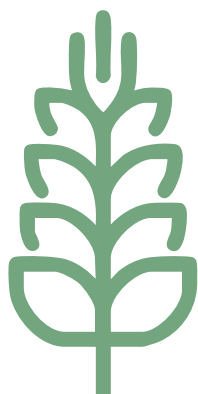
## LOOKING FOR NEW ENERGY SOURCES

Scientists are experimenting with techniques, refined by X-ray telescopes, to look for significant amounts of usable energy from nuclear fusion.



## SEEING INSIDE CELLS

Since the discovery of the DNA helix, X-rays have enabled us to investigate cells and the microverse. This leads to advancements in everything from human health to making more fertile soil for crops.



## GETTING TO THE HEART OF MATTER

X-rays allow scientists to probe matter at subatomic scales so we can learn how to grow plants more efficiently, make the next generation of fuel cells, and learn about the very structure of matter itself.



TO LEARN MORE