

## Astronomy and medicine

### *How can looking at space benefit our health?*

Our use of ground-based telescopes is making a difference in medicine too. Astronomers use these giant facilities to peer into the depths of the universe at objects like distant galaxies, taking pictures to analyse.

Specially designed software can automatically pick out the galaxies from the background of these images, full of fuzzy patches of light – not that dissimilar from the view a doctor sees of a tumour sample down a microscope.

In a great example of interdisciplinary research and collaboration, astronomers at the University of Cambridge have teamed up with their colleagues in the oncology department to share their knowledge.

Doctors normally use a technique called immunohistochemistry to identify and confirm cancers as well as assess their aggressiveness. This involves staining a tumour sample, looking down a microscope and noting small changes in the stains as the tumour cells express different proteins. When astronomers applied their technique for spotting galaxies to automatically detect these tumour changes, they matched the accuracy of a doctor in a much faster time.

This kind of collaboration is on the increase. At Harvard University's Astronomical Medicine group, one success has been to use tricks learned from astronomical imaging to increase doctors' accuracy at diagnosing heart disease from CT scans.

### REFERENCES

[University of Cambridge: Cancer researchers and astronomers team up](#)

[The Briefing: Collaborations between astronomers and doctors](#)

[YouTube: TEDx talk with Michelle Borkin on astronomical medicine](#)

### ABOUT THIS RESOURCE

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