



## News Front Page



Africa

Americas

Asia-Pacific

Europe

Middle East

South Asia

UK

Business

Health

Science/Nature

Technology

Entertainment

Also in the news

Video and Audio

Have Your Say

In Pictures

Country Profiles

Special Reports

RELATED BBC SITES

SPORT

WEATHER

ON THIS DAY

EDITORS' BLOG

Last Updated: Monday, 14 February, 2005, 15:15 GMT

E-mail this to a friend

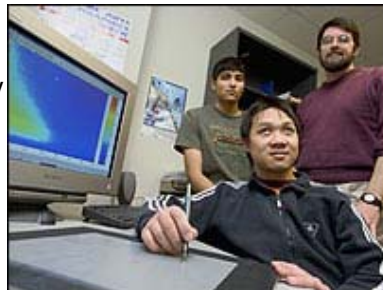
Printable version

## Blind student 'hears in colour'

Geoff Adams-Spink  
BBC News website disability affairs correspondent

### A blind student has developed software that turns colours into musical notes so that he can read weather maps.

Victor Wong, a graduate student from Hong Kong studying at Cornell University in New York State, had to read coloured maps of the upper atmosphere as part of his research.



Mr Wong was assisted by colleagues James Ferwerda and Ankur Moitra

To study "space weather" Mr Wong needed to explore minute fluctuations in order to create mathematical models.

A number of solutions were tried, including having a colleague describe the maps and attempting to print them in Braille.

Mr Wong eventually hit upon the idea of translating individual colours into music, and enlisted the help of a computer graphics specialist and another student to do the programming work.

#### 'Three dimensions'

"The images have three dimensions and I had to find a way of reading them myself," Mr Wong told the BBC News website.

"For the sake of my own study - and for the sake of blind scientists generally - I felt it would be good to develop software that could help us to read colour images."

He tried a prototype version of the software to explore a photograph of a parrot.

In order to have an exact reference to the screen, a pen and tablet device is used.

The software then assigns one of 88 piano notes to

#### SEE ALSO:

- ▶ [Latest Opera browser gets vocal](#)  
27 Jan 05 | Technology
- ▶ [Blind gamers get their own titles](#)  
02 Jan 05 | Technology
- ▶ [Video phone help for deaf people](#)  
17 Dec 04 | Technology

#### RELATED BBC LINKS:

- ▶ [BBC Ouch](#)

#### RELATED INTERNET LINKS:

- ▶ [Cornell University](#)

The BBC is not responsible for the content of external internet sites

#### TOP TECHNOLOGY STORIES

- ▶ [Anger over DRM-free iTunes tracks](#)
- ▶ [PC maker Dell to cut 7,000 jobs](#)
- ▶ [Online and offline worlds merge](#)

| [News feeds](#)

individually coloured pixels - ranging from blue at the lower end of this scale to red at the upper end.

Mr Wong says the application is still very much in its infancy and is only useful for reading images that have been created digitally.

"If I took a random picture and scanned it and then used my software to recognise it, it wouldn't work that well."

### 'Colour memory'

Mr Wong has been blind from the age of seven and he thinks that having a "colour memory" makes the software more useful than it would be to a scientist who had never had any vision.

"As the notes increase in pitch I know the colour's getting redder and redder, and in my mind's eye a patch of red appears."

The colour to music software has not yet been made available commercially, and Mr Wong believes that several people would have to work together to make it viable.

But he hopes that one day it can be developed to give blind people access to photographs and other images.

 [E-mail this to a friend](#)

 [Printable version](#)

#### PRODUCTS AND SERVICES

[E-mail news](#) [Mobiles](#) [Alerts](#) [News feeds](#) [Podcasts](#)

[News Front Page](#) | [Africa](#) | [Americas](#) | [Asia-Pacific](#) | [Europe](#) | [Middle East](#) | [South Asia](#)

[UK](#) | [Business](#) | [Entertainment](#) | [Science/Nature](#) | [Technology](#) | [Health](#)

[Have Your Say](#) | [In Pictures](#) | [Week at a Glance](#) | [Country Profiles](#) | [In Depth](#) | [Programmes](#)

 Most Popular Now | 23,543 pages were read in the last minute.

[Back to top](#) ^^

[Help](#) | [Privacy and cookies policy](#) | [News sources](#) | [About the BBC](#) | [Contact us](#)