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Title : Science Course unit 28

Contributors : M.J. Pentz
G.F. Elliott
G.S. Holister

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Seq.	Time	Footage	Sequence List	Sound Cue
			Pentz with a prism spectroscope. He will discuss and demonstrate the effect of aperture size of an optical instrument on its resolving power.	
	1'19"		Pentz explains how the spectroscope works.	Pentz, Michael, J.
1.	1'46"		Shots of two spectrum lines of yellow mercury vapour.	535.33
	2'45"		Pentz restricts the aperture of the spectrometer. Shot of mercury spectrum lines. When the aperture is restricted, the two lines blur into one.	535.84028
	3'45"		Pentz discusses the effect of size of aperture on the resolving power of the instrument. He uses telescopes as an example for his discussion.	doing the diffracting
	4'57"		G.F. Elliott with a diffraction pattern of DNA (X-ray diffraction pattern). He explains how such patterns can be analysed by a use of light analogues. Elliott passes a laser beam through a wire grid.	This is the X-ray.... 535.4 Elliott, G.F.
2.	6'29"		Diffraction pattern of the wire grid is shown on screen. Elliott examines and discusses the pattern.	537.535
	10'29"		Diffraction pattern of several helix approximation shown on screen and discussed.	
			Elliott explains why X-ray rather than light diffraction is used for molecular examination. Shot of a diagram showing X-ray diffraction apparatus. Elliott explains how it works.	

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Continuation

Seq.	Time	Footage	Sequence List	Sound Cue
	11'59"		Elliott with a photograph of the X-ray diffraction apparatus. He explains the process again.	
	12'27"			
	13'09"		Elliott shows the the camera unit of the X-ray diffraction apparatus and explains how it works.	
2.			Elliott compares the DNA X-ray diffraction pattern with the light diffraction pattern of one of the helix approximations shown earlier. They are similar in outline.	
	14'51"		Elliott with a model of a DNA molecule. He explains that the complex shape and structure of the molecule was discovered through the use of X-ray diffraction.	574.87320184 if you wish.
	15'35"		Pentz introduces G.S. Holister who will examine the use of polarised light in stress analysis of engineering materials.	Well as you ..... Holister, Geoffrey
	16'37"		Holister with a polariscope. He explains how it works.	535.52
	17'30"		Holister loads the polariscope with two specimen. He points out and compares the stress patterns.	
3.	21'27"		Holister loads a more complex specimen into the polariscope (model of a loading hook). He points out and explains the stress patterns which appear. Holister explains how direction and magnitude of stress can be determined.	620.1123
	22'38"		Holister discusses more sophisticated analyses which can be performed using polarised light. By using photostatic processes, analyses can be made, not just of models, but actual prototypes. Shot of an aircraft landing gear showing stress patterns under polarised light.	620.11295
	23'17"		Shot of a section of a ladies girdle showing stress patterns under polarised light.	
	24'32"		Film shots of dynamic, rapidly changing ~~stress~~ patterns of rail stresses as a train passes over tracks in a laboratory simulation. Stress patterns are shown at normal speed, then in slow motion. Credits	