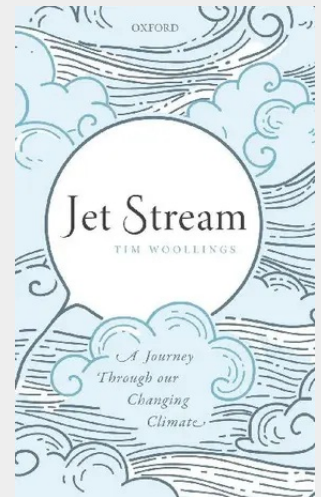


Jet Stream

A Journey Through Our Changing Climate

A number of extreme weather events have struck the Northern Hemisphere in recent years, from scorching heatwaves to desperately cold winters, and from floods and storms to droughts and wildfires. These events have fuelled intense discussions in scientific conferences, government agencies, cafes, and on street corners around the world. Why are these events happening? Is this the emerging signal of climate change, and should we expect more of this? Media reports vary widely, but one mysterious agent has risen to prominence in many cases: the jet stream. The story begins on a windswept beach in Barbados, from where we follow the ascent of a weather balloon that will travel along the jet stream all around the world. From this viewpoint we observe the effect of the jet in influencing human life around the hemisphere, and witness startling changes emerging. What is the jet stream and how well do we understand it? How does it affect our weather and is it changing? These are the main questions tackled in this book. We learn about how our view of the wind has developed from Aristotle's early theories up to today's understanding. We see that the jet is intimately connected with dramatic contrasts between climate zones and has played a key historical role in determining patterns of trade. We learn about the basic physics underlying the jet and how this knowledge is incorporated into computer models which predict both tomorrow's weather and the climate of future decades. And finally, we discuss how climate change is expected to affect the jet, and introduce the vital scientific debate over whether these changes have contributed to recent extreme weather events.

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