

TOTAL SOLAR ECLIPSE

(21st JUNE 2001)

Issued 24 April, 2001

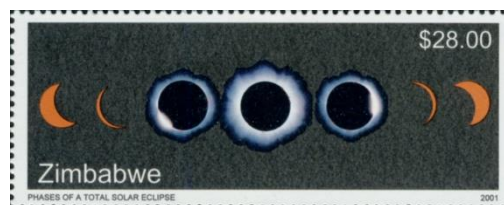
(Extracted from Philatelic Bureau Bulletin No 2 of 2001)²

On 21 June 2001 a total solar eclipse of the Sun was visible from within a narrow corridor that crossed Southern Africa. During a total solar eclipse, the Moon blocks the light from the Sun causing a narrow shadow to sweep across the face of the earth. Observers along the centreline of this shadow path see the sun completely covered by the Moon, an event called totality.

North eastern Zimbabwe will experience totality in a track that traverses the Zambezi escarpment from the Mana Pools region on the Zambian border to Nyamapanda on the Mozambique border. The partial phase of the eclipse is when the Moon's disk covers a portion of the Sun, the remainder of Zimbabwe experienced a partial solar eclipse.



The total duration of totality in Zimbabwe was over three minutes for observers near the centreline of this narrow corridor, which was 160 km wide extending into neighbouring Zambia and Mozambique. Zimbabwe was an ideal destination for groups of eclipse watchers to witness this rare event.



A total solar eclipse of the Sun begins with the partial phase, where over a period of about an hour the Moon obscures a portion of the Sun, which appears as a narrowing crescent. In the minutes before totality the sky gradually darkens. Up to one minute before totality the Sun's corona begins to emerge.

The corona is the outer atmosphere of the sun and is visible only during a total solar eclipse when the Sun's surface, the photosphere, becomes blocked out. The corona is an ultra-hot layer of the Sun reaching in the region of one million degrees Celsius and which may extend several million kilometres from the sun's surface.

As the Moon moves into and out of totality the vanishing light from the photosphere forms a jewel-like necklace along the edge of the Sun called Baily's Beads. The Moon has covered the entire face of the Sun except for a few rays of sunlight passing through deep valleys at the Moon's surface creating the effects of jewels on a necklace. At the moment before totality one last bead flares out forming the diamond ring effect. At the end of totality, a second diamond ring appears followed by Baily's Beads.

During totality the Solar Corona is visible together with huge outbursts of hot gases from the Sun's surface known as Prominences. These huge columns, which are due to the Sun's magnetic field, stream out from the surface at a height of up to 100 000 kilometres.

NASA astronomer and eclipse authority Fred Espenak, assisted the Harare Centre of the Astronomical Society of Southern Africa and the artist in the production of this issue of postage stamps, providing several diagrams and excellent photographs.



Photo taken by Fred Espenak during the 2001 Eclipse

Catalogue listings

SG	ZSC ¹	Value	Description
1050	478	\$8.00	Prominences during a Total Solar Eclipse
1051	479	\$21.00	Eclipse path over Southern Africa
	a.		Blue spot over 'O' of 'Over' (Cyl 1A R9/4)
1052	480	\$28.00	The phases of a total Solar Eclipse

Technical details

Stamp sizes:	\$8 & \$21	35 x 30 mm
	\$28	66 x 26 mm
Sheet Size:	\$8 & \$21	45 stamps (9 rows of 5 stamps),
	\$28	30 stamps (10 rows of 3 stamps)
		two panes per printed sheet
Artist:	Cedric Herbert	

Paper: ZSC paper type F - This is fluorescent front but non-fluorescent back and the gum is whitish PVA. The main change is that as the base paper does not contain optical brighteners the gummed side is non-fluorescent, but nowhere near as dark as paper E under UV.

Print colours: Cyan, magenta, yellow & black

Perforations: SG 14½, ZSC 14¼
top margin: Perforated through.
Other margins: Imperforate

Printer: NatPrint, Harare, Zimbabwe

Printer's Imprint: Bottom Margin, printed in black
\$8 & \$21 Below R9/3
\$28 Below R10/2

Cylinder numbers: \$8 & 24 Top margin above R1/1.
\$28 Bottom margin below R10/1
Colours from left – cyan, magenta, yellow, black

Colour register: Type TL 4– round boxed.
\$8 & \$21 Left margin opposite R1/1.
\$28 Left margin opposite R10/1
Colours reading down – cyan, magenta, yellow, black


Sheet Value: \$8 & \$21 Top margin, above R1/5
\$28 Bottom margin, below R10/3
Printed in black.

Sheet Number: Type SN 4a with 'PTC' prefix, reading down
\$8 & \$21 Right margin opposite R1/5
\$28 Right margin opposite R10/3

Print numbers: \$8.00 4, 000,050 \$21.00 400,020
\$28.00 400,050
(Note these are the numbers provided by the Philatelic Bureau, only the \$8 number is divisible by the number of stamps per sheet!)




Issue date: 24th April 2001

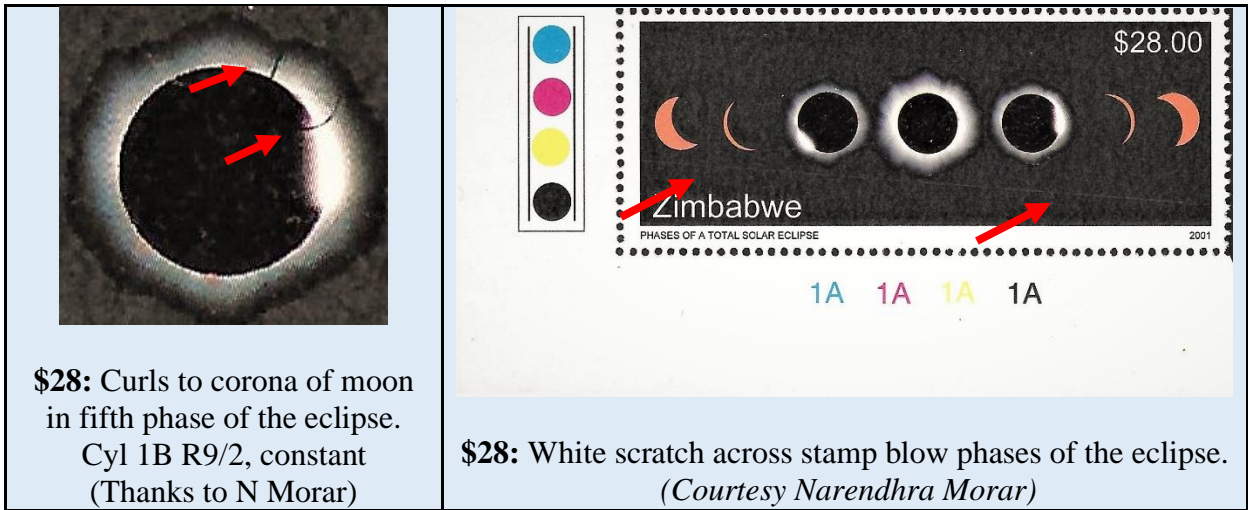
Listed variety

<p>\$21.00</p> <p>ZSC 479a – Blue spot over ‘O’ of ‘Over’</p>	
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Unlisted varieties

There are numerous small dots and specks in the printing of these stamps, particularly in the backgrounds.

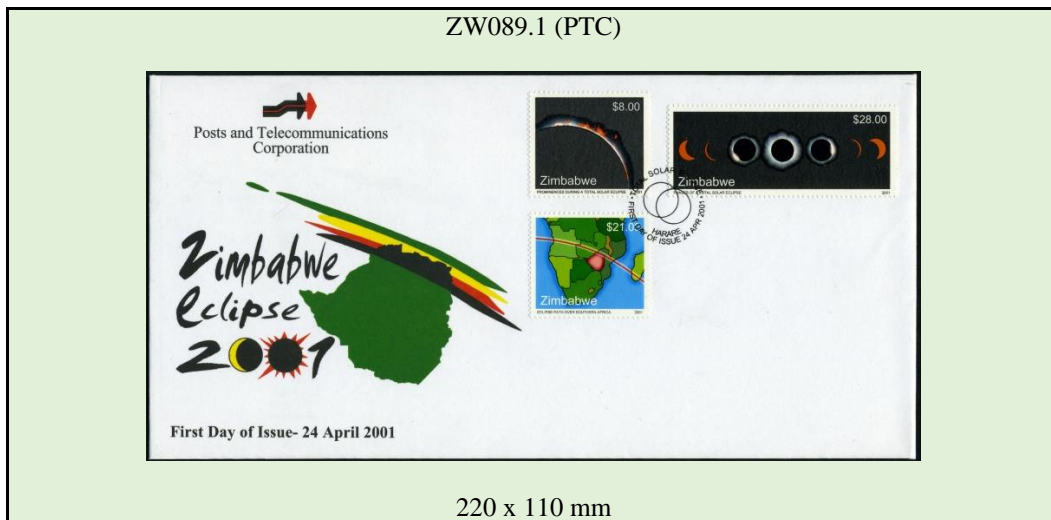
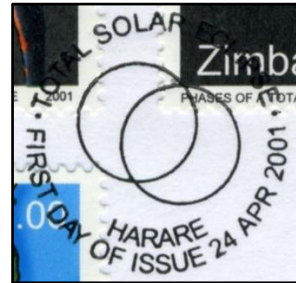
 <p>\$8: Shift in yellow plate, giving yellow edge to moon and corona. (Courtesy Narendhra Morar)</p>	 <p>\$8.00: Missing pin hole in horizontal perforations, adjoining vertical perforations between columns 9 & 10</p>
 <p>\$8: thick yellow line in top margin. (Courtesy Narendhra Morar)</p>	



First Day Cover

The cover numbering comes from the catalogue produced by Geoff Brakspear.

A pictorial first day of issue canceller was produced for this issued and was used by the Philatelic Bureau. Other first day cover cancellers continued to be used at main post offices.

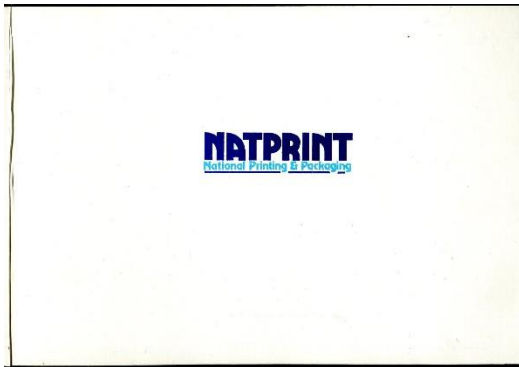


Related Material

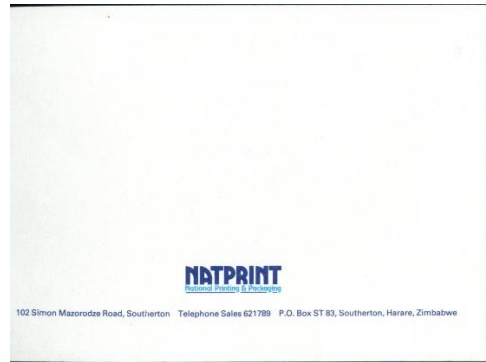
Natprint Proof Presentation Cards

Presentation cards produced by Natprint with imperforate proofs of the stamps to be issued. The presentation cards were forwarded to the PTC for approval of the final product.

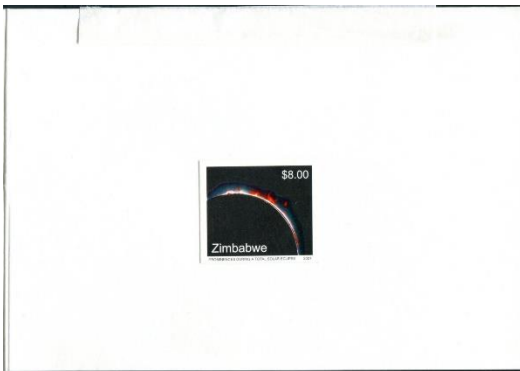
(Courtesy of Jefferson Ritson)



Front cover



Inside front cover



\$8 stamp



\$21 stamp



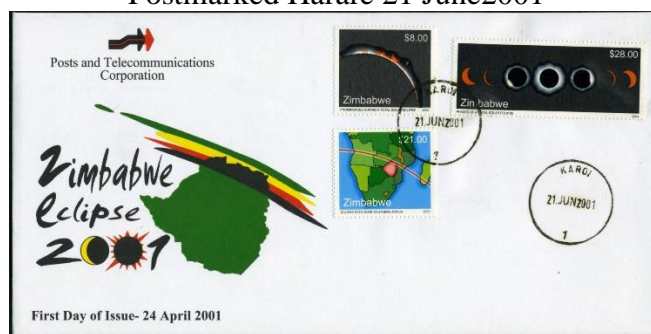
\$28 stamp

Solar Eclipse Covers

A number of covers were produced for the actual day of the Solar Eclipse, 21st June 2001



Harare Stamp Company produced this cover.
Postmarked Harare 21 June 2001



The PTC's First Day Cover, postmarked
Karoi 21 June 2001
(Karoi was not in the area of totality –
although close to the centre line)



This cover with the Mavuradonha Wilderness name, showing an elephant
looking up at the total eclipse of the Sun.
Postmarked Centenary 21 June 2001
(Number covers to 100)



One of two covers signed on 21st June 2001 by famous scientists visiting Zimbabwe for the Total Eclipse. They are:

Professor Anthony Fairall: Professor of Astronomy, University of Cape Town. Director of the Cape Town Planetarium. Author of ‘Cosmology Revealed – Living Inside the Cosmic Egg’. Discoverer of Galaxy ‘Fairall 9’

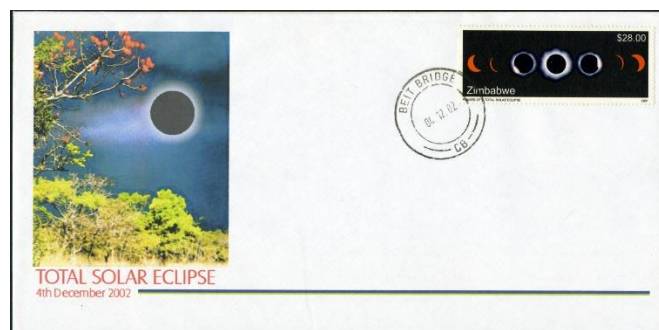
Alan Hale: Solar Scientist. Discoverer of comet Hale Bopp c/199501

Doug Bresecher: Solar Scientist. Goddard Space Flight Centre. Operate the Solo/Lascom Spacecraft for N.A.S.A.

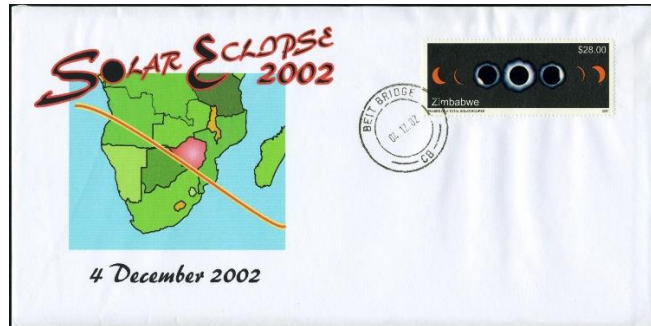
December 2002 Solar Eclipse

Zimbabwe experience a second total eclipse of the Sun on 4th December 2002. This time the eclipse path was to the south of Zimbabwe, following, roughly the line from Victoria Falls along to the River Limpopo.

Whilst no specific issue or cover was produced by the Post Office, never-the-less the Philatelic Bureau assisted in the postmarking of the covers below at Beit Bridge on the correct day.



Harare Stamp Company produced cover, using the June 2001 cover design.



Cover produced by Geoff Brakspear showing the Eclipse path,
based on the design of the \$21 stamp
(12 covers produced)

Bibliography:

1. "The Zimbabwean Concise Postage Stamp Catalogue", published by Harare Stamp Company, edited by Ken Allanson, Mike Amos and Geoff Brakspear. The catalogue continues to be updated and expanded by Geoff Brakspear
2. Posts & Telecommunications Corporation, Philatelic Bureau Bulletin No 2 of 2001