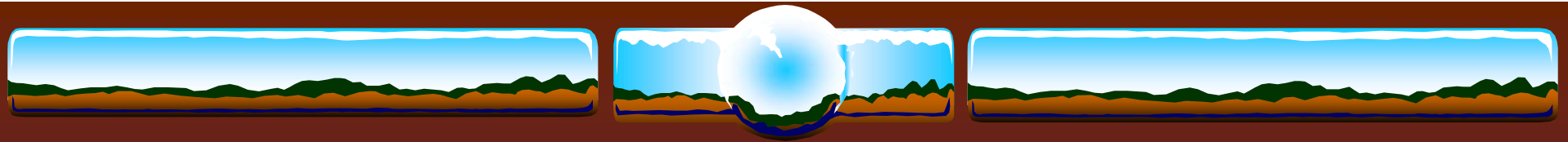


**Have a Strange DATE? Create Your
Own INFORMAT to Deal With Her.**

Venky Chakravarthy

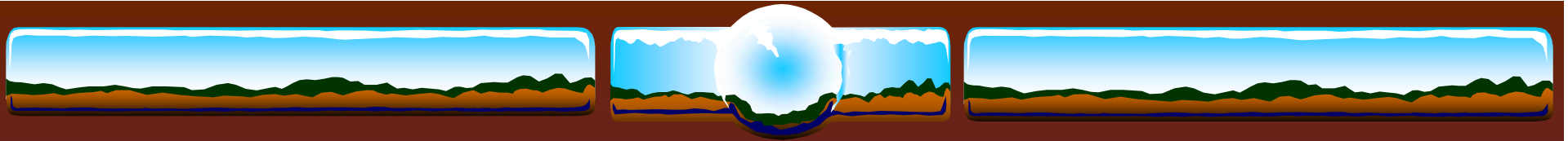


Overview

1. How to read DATE values that cannot be associated with a SAS® supplied INFORMAT.

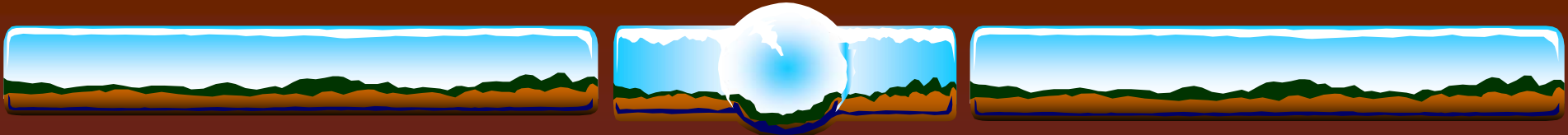
2. In doing so, how to make it:
 - 2.1. Easy for a junior/beginner programmer.
 - 2.2. Run efficiently for large size files.

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Introduction

- ❖ You can WRITE OUT “March 21, 2002” using the WORDDATE FORMAT.
- ❖ How can you do the reverse - READ it IN as a SAS date value?

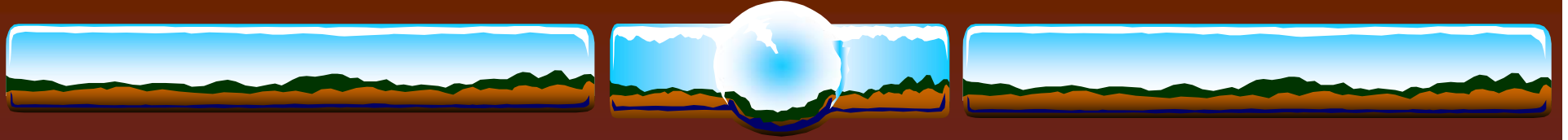


DATE Values in General

INFORMAT

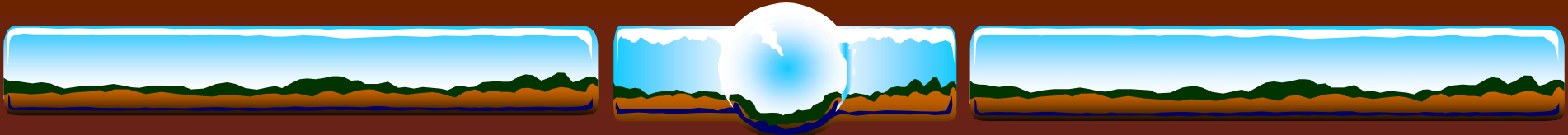
FORMAT

	Yes	No
Yes	X	X
No	X	X



Topics to be Covered

- ❖ Your “Good” DATE.
- ❖ Your “Not So Good” DATE.
- ❖ Your “Strange” DATE.



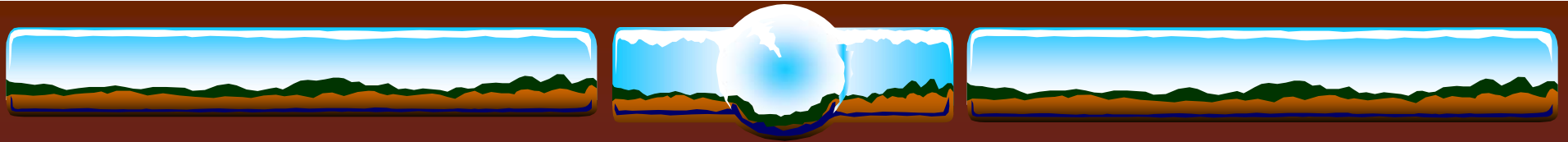
Topics to be Covered

❖ Your “Good” DATE.

INFORMAT

FORMAT

	Yes	No
Yes	X	
No		



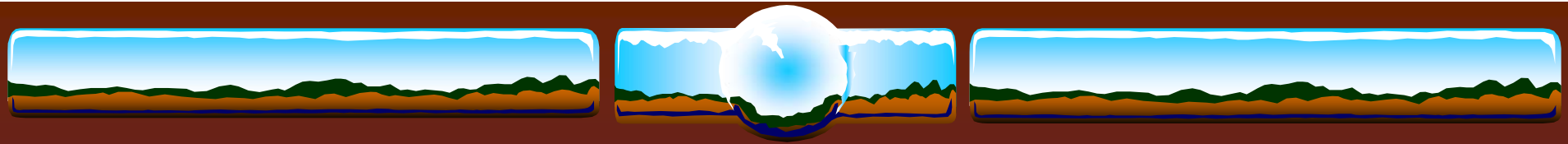
Your “Good” DATE

- ❖ A “Good” DATE Value has a SAS Supplied FORMAT and an INFORMAT.
- ❖ Consider Today’s DATE in the FORM: “21Mar2002”.
- ❖ Let us see how we can WRITE OUT and READ IN this value (Run Example #1).



Your “Good” DATE

- ❖ “Good” DATES can be handled with the Supplied FORMATS and INFORMATS:
 - ❖ “21/03/2001” (DDMMYY10.)
 - ❖ “03/21/02” (MMDDYY8.)
 - ❖ “020321” (YYMMDD6.)



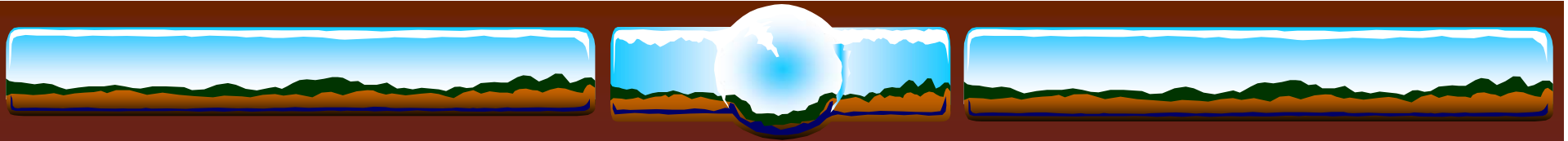
Topics to be Covered

❖ Your “Not So Good” DATE.

INFORMAT

FORMAT

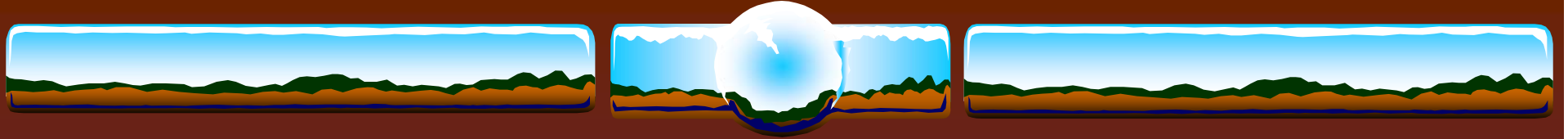
	Yes	No
Yes		X
No		



Your “Not So Good” DATE

(Divide and Conquer)

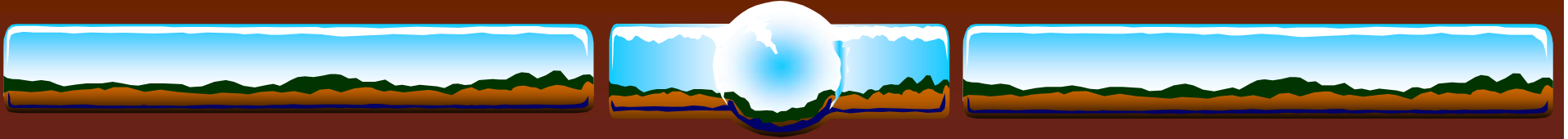
- ❖ A “Not So Good” DATE May Look Like the LOG from the Previous Example.
- ❖ How can you read “March 21, 2002”?
- ❖ Divide and Conquer



Your “Not So Good” DATE

(Divide and Conquer)

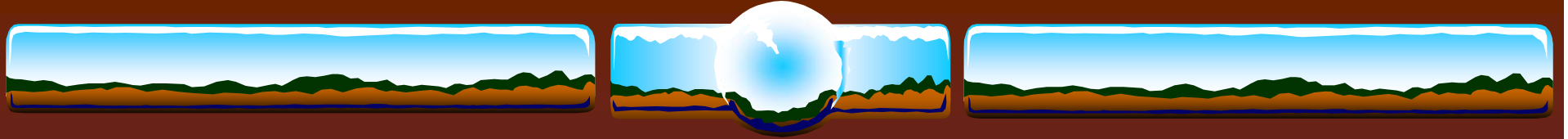
- ❖ Read “March 21, 2002” as a TEXT string.
- ❖ Divide into parts that could be put together with an available INFORMAT:



Your “Not So Good” DATE

(Divide and Conquer)

- ❖ Part1 = “21”.
- ❖ Part2 = “Mar”.
- ❖ Part3 = “2002”.



Your “Not So Good” DATE

(Divide and Conquer)

- ❖ Concatenate the three parts:
 - ❖ $\text{Parts} = \text{Part1} \parallel \text{Part2} \parallel \text{Part3} ;$
 - ❖ (i.e. “21Mar2002”)



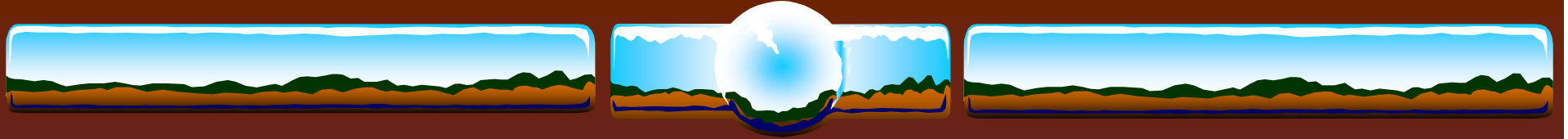
Your “Not So Good” DATE

(Divide and Conquer)

- ❖ Apply the DATE9 INFORMAT:

```
MSUGday = input ( Parts , date9. ) ;
```

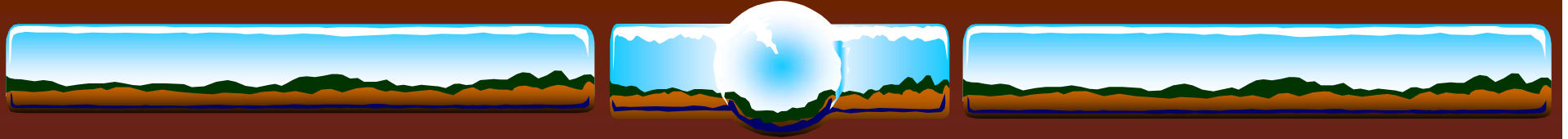
- ❖ Example #2.



Your “Not So Good” DATE

(Divide and Conquer)

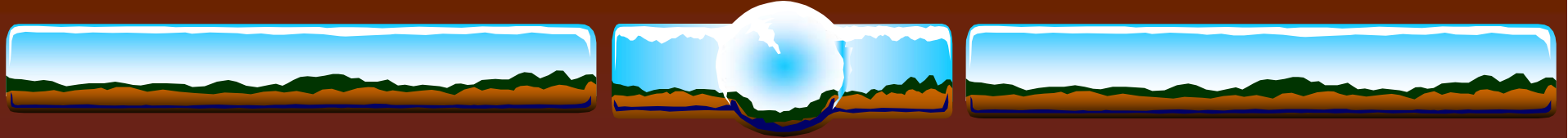
- ❖ Your “Not So Good” DATE has now been Divided and Conquered.
- ❖ Is there a Gentler and Kinder Approach?



Your “Not So Good” DATE

❖ Create Your Own INFORMAT.

❖ The General Principles Behind this Idea are:



Your “Not So Good” DATE

(Create Your Own INFORMAT)

- ❖ A Range of DATES Can be Associated with Values of the Form “March 21, 2002”.
- ❖ Facilitates a “LOOK-UP” of the Corresponding DATE for the Value that is READ IN.



Your “Not So Good” DATE

(Create Your Own INFORMAT)

❖ Create a Control Data Set for PROC FORMAT with Variables:

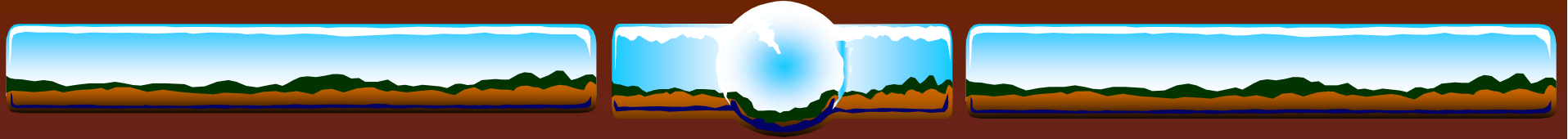
(1) FMTNAME = <Your INFORMAT>

(2) TYPE = “I”

(3) LABEL = <SAS Date>

(4) START = <Value without INFORMAT>

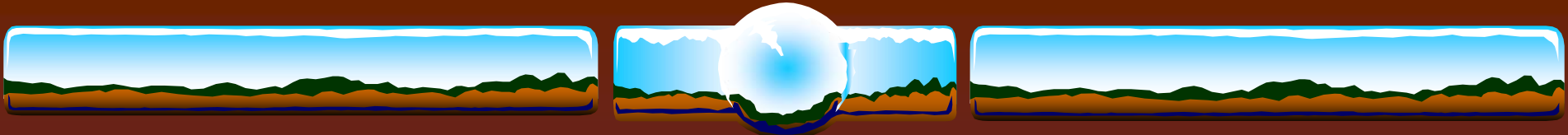
❖ Run PROC FORMAT and Output Your INFORMAT.



Your “Not So Good” DATE

(Create Your Own INFORMAT)

- ❖ READ IN Your Value by Associating it with Your INFORMAT.
- ❖ Example #3



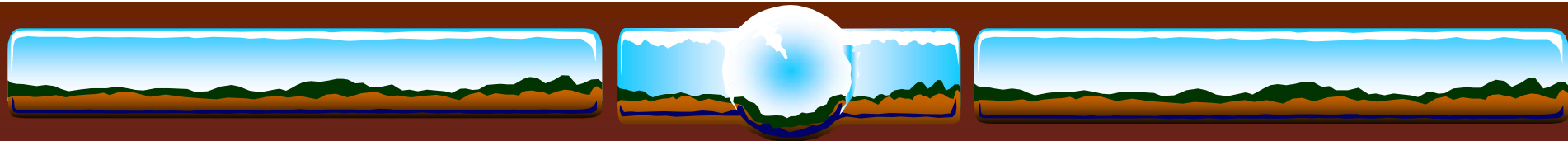
Topics to be Covered

❖ Your “Strange” DATE.

INFORMAT

FORMAT

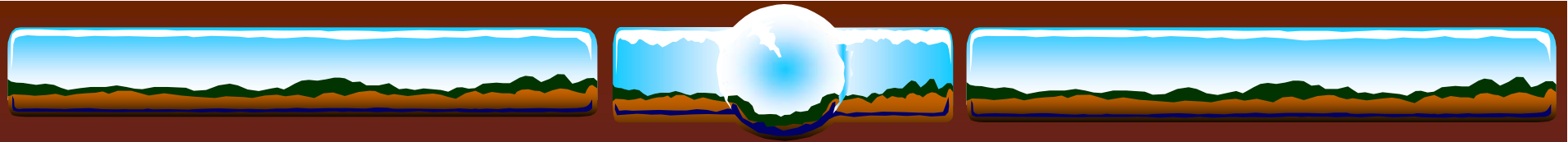
	Yes	No
Yes		
No		X



Your “Strange” DATE

(Create Your Own INFORMAT)

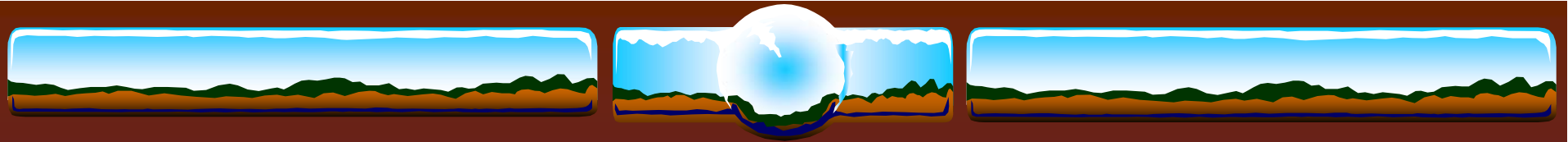
- ❖ Consider the Task of READING IN “2002/MAR/21” as a SAS DATE.
- ❖ How Do We Deal with This?



Your “Strange” DATE

(Create Your Own INFORMAT)

- ❖ Welcome to DIRECTIVES in the PICTURE FORMAT.
- ❖ Customize Your Own DATE FORMAT using Multiple DIRECTIVES.
- ❖ Using the Customized FORMAT You Can Create Your INFORMAT as Before.



Your “Strange” DATE

(Create Your Own INFORMAT)

- ❖ The following DIRECTIVES are Relevant:
 - ❖ %Y – Represents “2002”
 - ❖ %b – Represents the Abbreviated Month Name “MAR”
 - ❖ %d – Represents the day “21”.



Your “Strange” DATE

(Create Your Own INFORMAT)

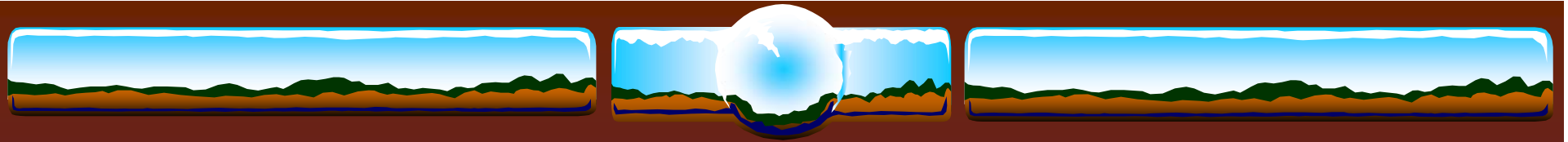
❖ A Few Other DIRECTIVES:

.%A Full weekday name

.%B Locale's full month name

.%m Month as a decimal

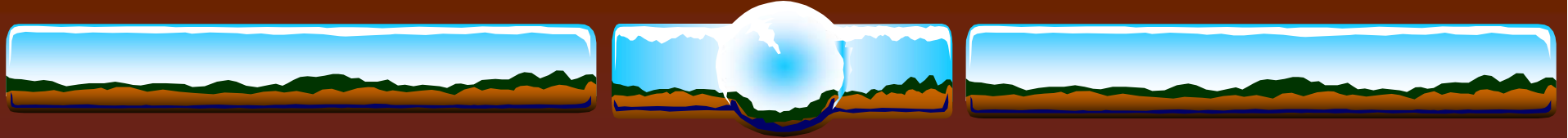
.%w Weekday as a decimal number



Your “Strange” DATE

(Create Your Own INFORMAT)

❖ Example #4



Divide and Conquer Versus Your INFORMAT

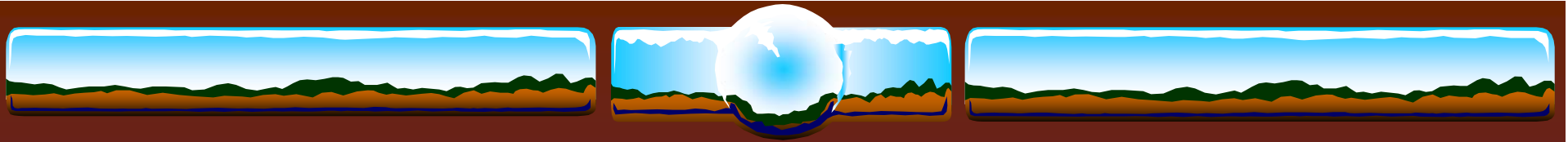
- ❖ Ease of Use for a Junior/Beginner.
 - ❖ Store the “Divide and Conquer” Portion in a Macro.
 - ❖ Store the INFORMAT in a Library.



Divide and Conquer Versus Your INFORMAT

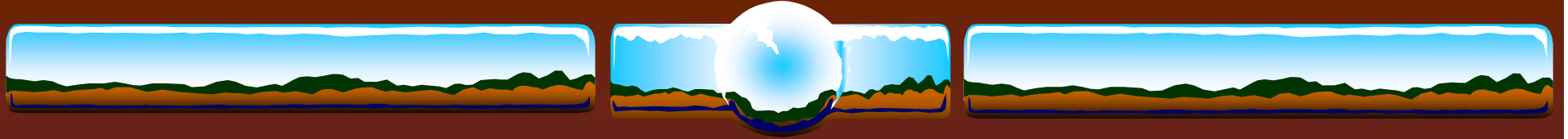
❖ Performance Metrics (In Seconds Except Ratio)

INFORMAT APPROACH	DIVIDE APPROACH	DIFFERENCE INF - DIV	RATIO INF / DIV
38.16	82.13	-43.97	0.46
39.92	84.42	-44.50	0.47
37.91	81.75	-43.84	0.46
38.14	81.95	-43.81	0.47
37.95	81.69	-43.73	0.46



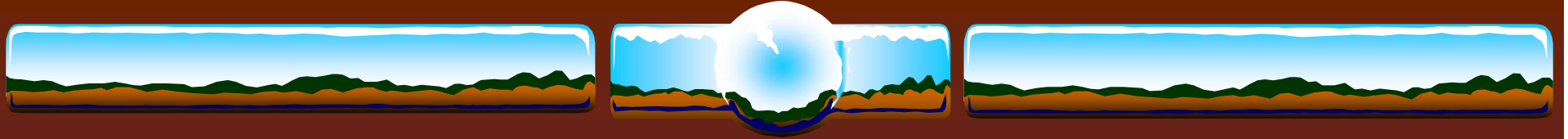
Limitations

- ❖ The INFORMAT Approach is Infeasible for DATETIME values.
 - ❖ 1 Day of DATETIME \approx 237 Years of DATE values.
 - ❖ 1 Year of DATETIME \approx 31.5 Million Observations.



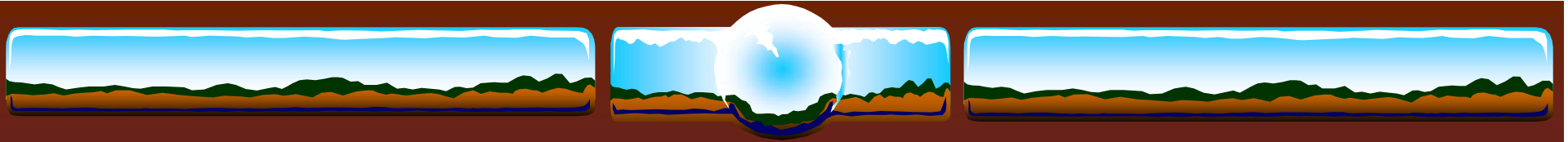
Summary and Conclusion

- ❖ Started with the Basic DATE Values.
- ❖ Progressed to Read DATE Values having FORMATS but NO INFORMATS.



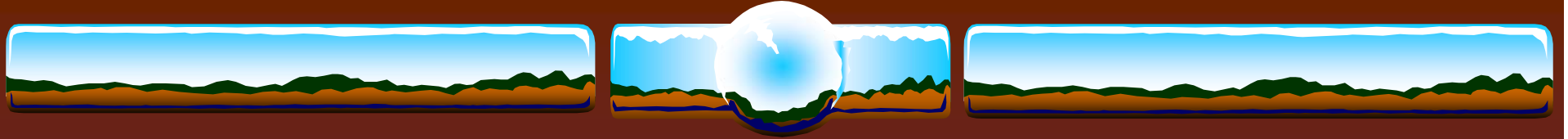
Summary and Conclusion

- ❖ Divide and Conquer Approach.
- ❖ Create Your Own INFORMAT Approach.
- ❖ Proceeded to READING Values Having Neither FORMAT nor INFORMAT.



Summary and Conclusion

- ❖ Used the DIRECTIVES in the PICTURE FORMAT to Create a Custom DATE FORMAT.
- ❖ Used the Custom FORMAT to Create the Needed INFORMAT.



Acknowledgements

- ❖ Ian Whitlock for Polishing the Code for the INFORMAT Approach.
- ❖ Paul Dorfman for Suggesting a Method for Measuring Performance.



About the Speaker

Speaker **Venky Chakravarthy**

Address **1591 Abigail Way**
Ann Arbor, MI 48103

Telephone **(734) 622-1963**

E-Mail **swovcc@hotmail.com**