

### **TITLE**

It is wonderful to see you all here this evening... I know that a midweek event can be quite an effort to fit in.

Thanks to Mary Marshall for organising and publicising this seminar at Temple David Function Centre.

The Council of Christians and Jews WA is a positive enterprise where our two faiths can support our common interests.

And as the exodus narrative is foundational to the story of monotheism and ethics, I am in the right place here.

# Introduction

The foundational narrative of the early Israelites—their exodus from Egypt, national formation in the Sinai wilderness, and conquest of Transjordan and Canaan—is commonly viewed as literature rather than history. Mount Sinai has not been conclusively identified, few wilderness sites can be located, itinerary data seem to be incoherent, and the standard chronology does not support biblical expectations. Archaeologist Amihai Mazar states: “All that can be said is that the Exodus story is based on some remote memories” and “Most scholars of the last generation regard the Conquest narratives as a literary work of a much later time, designed to create a pan-Israelite, national saga.”\*

Since 1983, veteran archaeologist and paleoethnologist Professor Emmanuel Anati has advocated for Har Karkom in the Central Negev as Mount Sinai, documenting a vast body of cultic remains as evidence. The Karkom-Sinai identity is popular in Israel, but few scholars in related fields support Anati's proposal. Dr Hurn undertook to resolve the wilderness itineraries between Goshen and the Jordan River via Har Karkom and Ein Qudeirat (Kadesh) by adopting a hydrological model of the biblical regions and a holistic approach to the geographical data. A successful reconciliation of text to terrain would have significant implications regarding the authenticity of the received text and the study of the Torah as history.

\* “The Patriarchs, Exodus, and Conquest Narratives in Light of Archaeology,” in *The Quest for the Historical Israel: Debating Archaeology and the History of Early Israel* (Atlanta, GA: Society of Biblical Literature, 2007), 61-2.

## INTRODUCTION

I won't read this introduction from the flyer,

My slides and notes will be available on the CCJWA website, and this will add context.

## Deb's Bio

Deborah Hurn has a BTh(Hons) and a PhD in Biblical Geography. Resident in Perth, she is now an adjunct of Avondale University (Cooranbong) and a research fellow of the Australian Institute of Archaeology at La Trobe University (Melbourne). Her specialty is the historical geography of the Israelite wilderness journeys, a project involving research in Egypt, the Sinai-Negev, and Transjordan. Deborah began her investigation in 1998 in collaboration with Dr Tali Gini, then Israel Antiquities Authority archaeology inspector for the Central Negev, now senior researcher.

Together they support and refine ethno-archaeologist Professor Emmanuel Anati's proposals that Har Karkom in the Central Negev is the biblical Mount Sinai, and that the exodus and conquest brought to an end the Old Kingdom in Egypt and the Early Bronze Age in Canaan. Deborah's dissertation topic is "identifying and delineating the geographic regions of the Israelite migration from Egypt to Canaan using a hydrological approach". Her primary contribution is the discovery of the system operated by ancient authors in describing and dividing biblical lands. Deborah continues to write up her research on the wilderness itinerary from Goshen to the Jordan, and is hopeful of a post-doctoral fellowship in Israel.

### **DEB'S BIO**

Likewise for my bio.

But I *will* tell you the story of how I came to research the geography of the Israelite exodus and wanderings.





**Nitzana Village:** Etan J. Tal – Wiki Commons

## **NITZANA**

In 1995 we took our 3 children aged 8-11 to Israel for 4 months and showed them sites and museums all over the Land.

On our last weekend, we visited the Negev as guests of WIZO and JNF, thanks to my father's Jewish contacts.

We stayed in Nitzana, an Education Village close to the Egyptian border.

The then director of the village, Ze'ev Zivan, sent us off with a guide to tour the remains of Nabataean farms in the area.





## **ENCOUNTER**

In Nitzana we also met the local archaeologist, Dr Tali Erickson-Gini. She was inspector for the Israel Antiquities Authority, responsible for the Central Negev region.

It was the weekend, so she brought her youngest child with her.

In our introductions, I told her we had come through Egypt and climbed Mount Sinai to see the sunrise.

She said confidently “Mount Sinai is not at Jebel Musa”, and told us about a mountain within Israel’s borders called Har Karkom...

and a Jewish archaeologist from Italy, Prof Emmanuel Anati, who had discovered many ancient remains there.

She also offered information about archaeology and dating, but most of it went over our heads.



## NEGEV TOUR

The next day she took us to see sites in the Northern Negev... the Byzantine churches at Ovdat and Shivta, and the Ottoman remains near the well of Beerotayim...

She also showed us some cairns from the Intermediate Bronze Age which she said were Israelite graves from the exodus era.

I had read enough to know that there were no identifiable exodus remains in the southern wildernesses, so this was intriguing.

Strange to look back on these pictures now nearly 30 years later...

seeing as this encounter with Dr Gini and the information she shared has brought me to this point...

and is the reason I am speaking to you today as a specialist in the exodus and wilderness itineraries of the Torah.



## INVESTIGATION

We returned to Australia, and I don't remember thinking much more about it. After 3 years, in 1998, I came across an article in a back-issue of the Biblical Archaeology Review, July 1985. It was written by Prof. Anati himself. The title was "Has Mt. Sinai been Found? I read it carefully. It was all very interesting to me in light of our personal Negev encounter with Tali. So I set about to see if the Har Karkom site would make better sense of the exodus route than the Jebel Musa site. I had only tourist maps and some Bible atlases, so I soon got stuck. After a few weeks of frustration, I got in contact with Tali through the IAA. I had many questions. We ended up collaborating intensively for over a year, sending 100s of emails when the internet was still new.

My aim was to test the Karkom-Sinai hypothesis by the itinerary data of the Israelite journeys. As some of you may know, the geography appears to be fractured and contradictory, and this has given much opportunity to critical scholars to claim that the Torah is not authentic history. It is now commonly believed that the Torah was written in the late Monarchical or Persian era, by Jewish scribes who had never been to these wilderness regions. Worse, some scholars claimed that such scribes sought to fabricate a grand national saga for the Jews.





## **COLLABORATION**

In that year I visited Israel again twice, and also toured the Sinai and Jordan to become familiar with the landscape.

Tali drove me all over the Negev, mostly off-road, looking at ancient routes and remains, water-sources, and terrain.

We camped and hiked at Har Karkom of course, and other relevant sites.

She had an intimate understanding of Negev archaeology from being constantly in the field.

I could ask her many questions and she knew the answers, or she knew scholars who did.

And if they didn't know something she could actually drive down to a site and have a look!

I had been learning Hebrew since 1988 for my own interest, which turned out to be vital for my studies.



Deb, Tali, Emmanuel  
Lot Hotel, Ein Boqeq  
Sept 1998

### **MEETING ANATI**

During those visits, I met and interviewed Professor Anati.

In this first meeting above, map open, I discovered we differed significantly on our proposed exodus routes.

Knowing what I had already discovered, I became more determined to make the best case, one that satisfied all the criteria from all fields without denying or distorting any of them.

## From the scholars: 1

- “a **geographical hodgepodge** totally **incomprehensible** in terms of the geographical realities of southern Transjordan.”
  - **J. Maxwell Miller**, “The Israelite Journey Through (Around) Moab and Moabite Toponymy,” 1989: 587
- “**One wonders how familiar** the itinerary writer was with the geography and topography of Transjordan.”
- “The passage is **vague and confusing**, and indicates that **the writer had very little knowledge** of possible routes through Transjordan.
- “... reveals the **writer’s scant knowledge** of actual travel possibilities in first millennium Transjordan.”
  - **Burton MacDonald**, “East of the Jordan”, 2000: 98.

### SCHOLARS 1

Three quick slides to show just how troubled the field of biblical geography really is.

J. Maxwell Miller and Burton MacDonald are late 20<sup>th</sup> century experts on the historical geography of the Transjordan, the biblical lands to the east of Israel. They conclude that the biblical writers had very little knowledge of the region.



## From the scholars: 2

- “Biblical studies has a **geography problem**.... we have been inclined to date biblical texts based on the assumption of a straightforward correspondence between the geography in a text and the time in which it was written. Numbers 21 frustrates any such effort because **the geography is utterly incoherent.**”
  - **Angela Roskop Erisman**, *For the Border of the Ammonites Was... Where?* 2016: 761
- “rather **serious geographical problems**.... **profound lack of clarity** about the Israelites’ route...”
- “the geography of Exodus 17-18 is **confusing at best**”
  - **Angela Roskop**, *The Wilderness Itineraries: Genre, Geography, and the Growth of Torah*, 2011: 139, 180

### SCHOLARS 2

Angela Roskop did her PhD on the topic of the wilderness itineraries in 2008, published by Eisenbrauns as a book in 2011.

These quotes are typical of her conclusions.

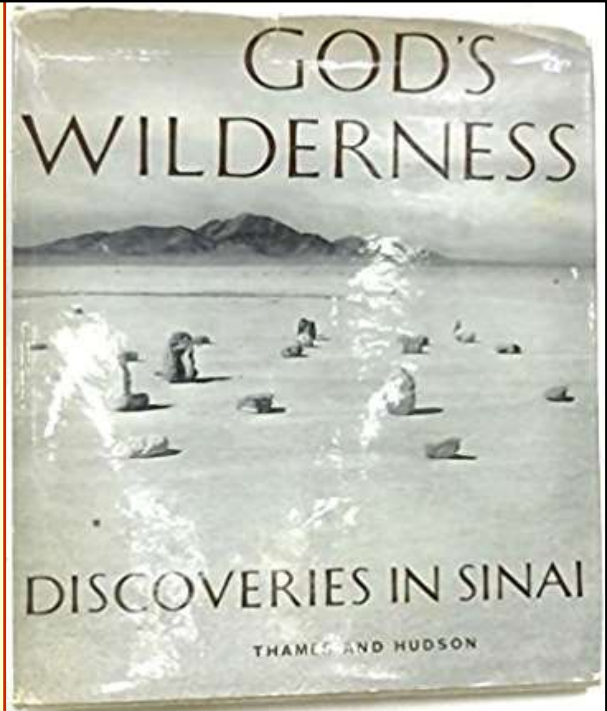
## From the scholars: 3

- “How do we read **pentateuchal geography** that is realistic in its representation but **often not literal**?”
  - **Thomas B. Dozeman**, *The Historical Geography of the Pentateuch and Archaeological Perspectives*, 2016: 729.
- Over 150 years of intense study of the Hebrew Bible has resulted in perspectives that completely changed the understanding of this complex text, in a way very much different from traditional viewpoints.... **all agree that the biblical text in general, and the Exodus narratives in particular, is the product of a long and complex process of formation, collation, editing, and reception.**
  - **Aren M. Maeir**, *Exodus as a Mnemo-Narrative: An Archaeological Perspective*, 2015, 410.

Thomas Dozeman is well known as a literary critic of the Bible... and Aren Maier is an Australian Jewish archaeologist, also well known in his field. Their consensus is that the biblical texts are the result of many authors and editors and cannot be relied on for history. This is the scholarly environment I faced when I took on the problem of exodus geography. Luckily at the time I hadn't read these scholars, and therefore didn't know the job was impossible. I just thought they hadn't found the right mountain yet... and when they did the exodus itinerary would work out. Most scholars would see this attitude as naïve, and ignorant of the literary issues also. But you can judge for yourself this evening whether a new geography may be key to resolving the problems.

**“To-day the problem of identifying the route of the Exodus and Mount Sinai itself is one of extraordinary difficulty, far more than any other problem of Palestinian Biblical topography.” (p. 118)**

Yohanan Aharoni, 1961  
“Kadesh-Barnea and Mount Sinai.”  
*God's Wilderness: Discoveries in Sinai*,  
by Beno Rothenberg, 115–82.



### **HARDEST PUZZLE**

This is a quote from a famous Israeli archaeologist of last century, Yohanan Aharoni

He wrote this in the year I was born, as it happens: this is a precious book in my collection.

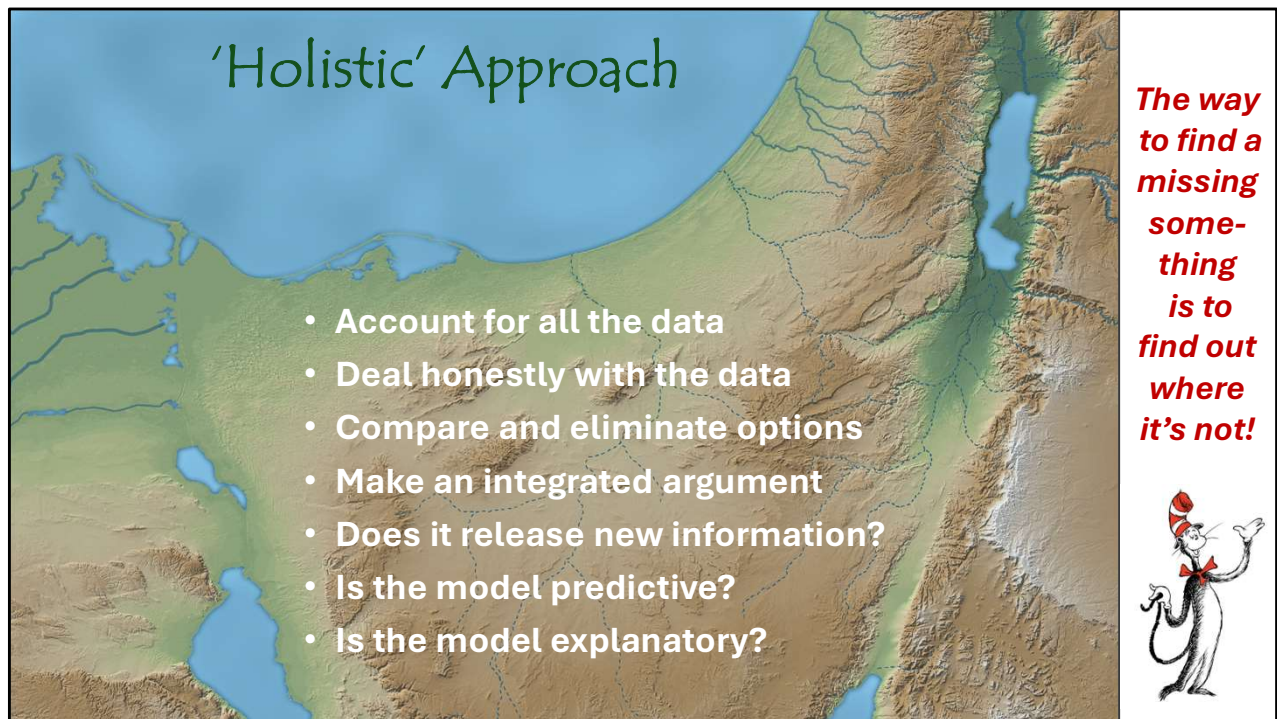
He says the problem of identifying Mount Sinai and the route of the exodus is the hardest puzzle of all.

He's not overstating it! The 19<sup>th</sup> century explorers made huge efforts to work it out.

But progress on the puzzle required some information not available until recently.

And what we might call a 'holistic' approach to the problems.






## 'Holistic' Approach

- Account for all the data
- Deal honestly with the data
- Compare and eliminate options
- Make an integrated argument
- Does it release new information?
- Is the model predictive?
- Is the model explanatory?

*The way to find a missing something is to find out where it's not!*



### **HOLISTIC APPROACH**

A holistic approach has to be flexible in order to manage complexity.

This is how I saw the problem, as a complex puzzle requiring an overview of all the factors at once...

textual, geographical, hydrological, and archaeological.

I looked for confirmation of each route and site in whether it satisfies all the data of both text and terrain.

The investigation required a rigorous process of elimination...

A phrase from Dr Suess's "The Cat in the Hat" is apt [Universal Studios animation]

"The way to find a missing something is to find out where it's not!"

Finally, the test of a scientific model is whether it is predictive or has explanatory power

In the hard sciences (like maths, physics, and chemistry), a successful model has predictive power.

In the soft sciences (like anthropology, economics, and psychiatry), this translates to having explanatory power.

# Historical Geographers... (Biblical)

**“The necessary link between archaeology and history is historical geography.”**

Anson Rainey 1988

❖ **compare text to text**

❖ **compare text to terrain**

❖ **engage earth sciences**

❖ Archaeology

❖ Hydrology

❖ Toponymy

❖ Topology

❖ Geology

❖ Climatology

❖ Anthropology

❖ **Edward Robinson**

❖ 1794-1863

❖ **Arthur Penrhyn Stanley**

❖ 1815-1881

❖ **Zecharia Kallai**

❖ 1923-2016

❖ **Anson Rainey**

❖ 1930-2011

❖ **Shmuel Ahituv**

❖ 1935-

## **HISTORICAL GEOGRAPHERS**

Historical geographers must take into account the findings from many fields. They “compare text to text”. They “compare text to terrain”, and they engage any earth sciences that have bearing on the past.

All historical geography involves cross-disciplinary investigations.

Here are some recognised names in the field; all outstanding historical geographers, still cited widely in the literature.

I believe that if the 19<sup>th</sup> century geographers had known of the existence and archaeology of Har Karkom, they would have completed the itinerary work that I have attempted now, 150 years later.



## **KARKOM 2004**

But to finish the story of my involvement in this project.

During Pesach 2004, I was a volunteer on Anati's annual archaeological survey at Har Karkom.

There were only 12 of us, all Italians, and 2 Israeli staff

But over the week of holidays, about 300 Israeli and international tourists passed through.

The Israel Nature and Parks Authority provided a ranger, but there are no facilities there.

I was surprised at the amount of interest. Anati gave an impromptu lecture one evening for the campers.

Our cook said it was wonderful to see the Bene Yisrael returning to Har Sinai with their children.

An American group even held a Bar Mitzvah at the foot of the mountain... complete with dramatic lighting and a soundtrack.





### **KARKOM-SINAI COLLOQUIUM**

In 2013, I presented a paper at Anati's Karkom-Sinai colloquium in Mizpe Ramon, 25 presenters in all.

My topic was the "11 days" of Deuteronomy 1:2, offering an alternative reading of a text that has been often used to disqualify Karkom as a candidate for Sinai.

The next day about 200 attendees and a TV1 film crew took the field trip to Har Karkom in 40 desert vehicles.

Again, I was surprised to see the level of interest from the Israeli public.

**See slides on the 11-days of Deut 1:1-2 at the end....**



### **FILMING EXPEDITION**

And in 2018, an American film crew came to the Negev with Tali and me to film a documentary on various options for Mount Sinai.

This is our first interview on the approach to the western campground at the foot of the Karkom plateau.

In 2018 also, after 33 years in the field, Tali was promoted from Antiquities Inspector, constantly in the field, to Senior Researcher based in the IAA Beersheba office, publishing excavations and surveys.

She had inspected Prof. Anati's annual surveys here from 1985 to 2011, nearly all the years he was active in the region.



## ANATI'S STORY

Anati's family are Holocaust survivors.

His parents and 3 younger brothers fled Nazi deportations in Florence and other places, finally living in a cave in the Tuscan Appenine mountains during the winter of 1944, Anati's 14<sup>th</sup> year of life.

They were hungry and cold, and lost all their wealth paying a villager to leave food out for them to collect at night.

Their story is the subject of a 2016 documentary, *Shalom Italia*, in which the 3 surviving brothers met in Italy 70 years later and attempted to find the cave.

It is available for rental and streaming on subscription services. I highly recommend it.

It is not a sad movie, but a celebration of life.





### **ANATI'S QUALIFICATIONS**

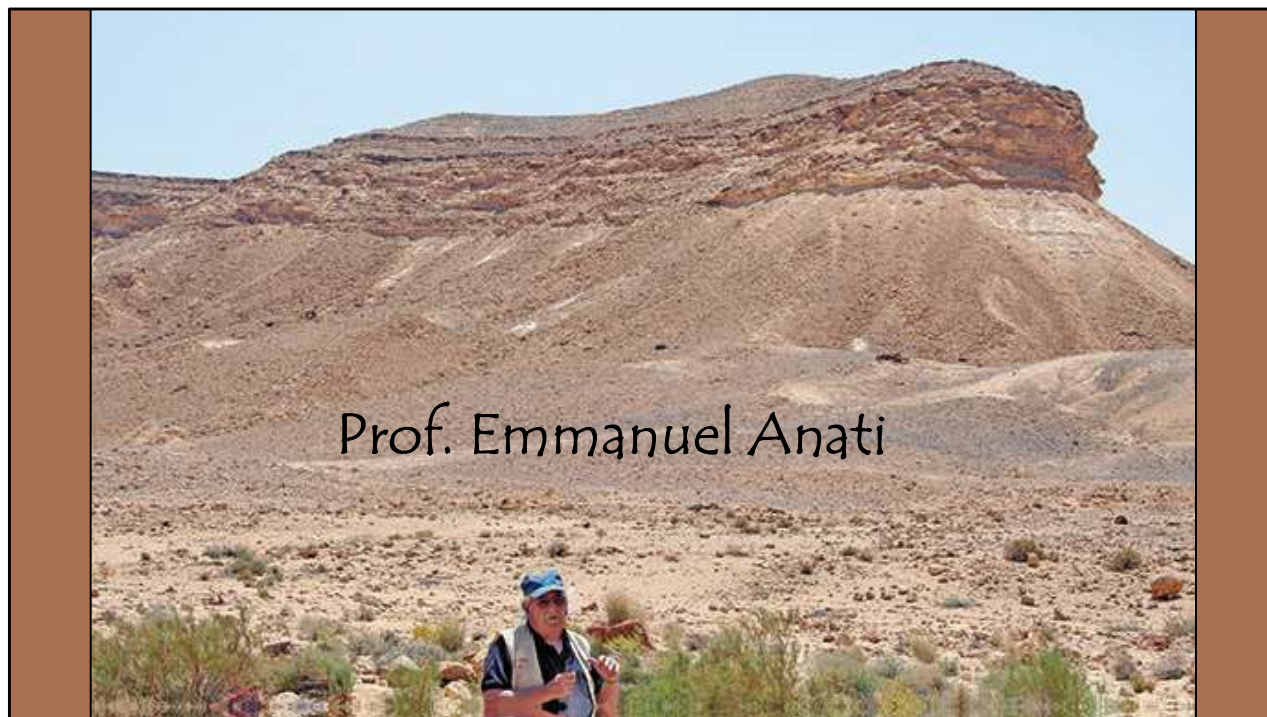
When the war was over, the Anati family made Aliyah and recovered their freedom.

The sons were all high achievers: Anati studied archaeology and historical geography at Hebrew University...

anthropology and social relations as a Fulbright scholar at Harvard; earned his doctorate in ethnology at the Sorbonne in Paris in 1960; and trained in social sciences at the Universities of London and Oxford, sponsored by the American Philosophical Society.

Anati's principal scientific interests are the art and religion of prehistoric and tribal cultures. He has published over 70 books and 100s of journal articles. So the identity of the biblical Mount Sinai is not his primary interest, nor does he have a religious investment.





### **ANATI'S DISCOVERY**

Born in 1930, Anati is now 94 years old, still active and publishing in his field. He is the last survivor of the original explorers of the Sinai and Negev on behalf of the modern state of Israel.

Anati first discovered abundant rock art at Har Karkom as a graduate archaeologist in 1955. He did not visit the mountain again until 1980 despite looking for it several times. Then he surveyed and published all its antiquities for 30 years until he could no longer climb the mountain in 2011.

I took this picture on that field trip in 2013 for the Karkom-Sinai colloquium. This is just one promontory of the Karkom plateau, best known because it protrudes into the western valley, where pilgrims and travellers have camped for millennia. And from some angles (not so much this one) it has a "sphinx face".



### **WESTERN VALLEY**

Three quick pictures: Here is the same sphinx-like promontory into the western valley. The basecamp for Anati's archaeology survey is at the foot of the main trail up onto the mountain. I took this picture in 1999 on film, so the pictures are going brown now.

But note the vegetation in Nahal Paran.

The Central Negev Highlands are not sterile granite mountains such as those in the Southern Sinai. These are porous limestone steppes with seasonal grasses, perennial shrubs, and occasional trees in the wadis. The ecology used to be much better than this before several millennia of desertification.

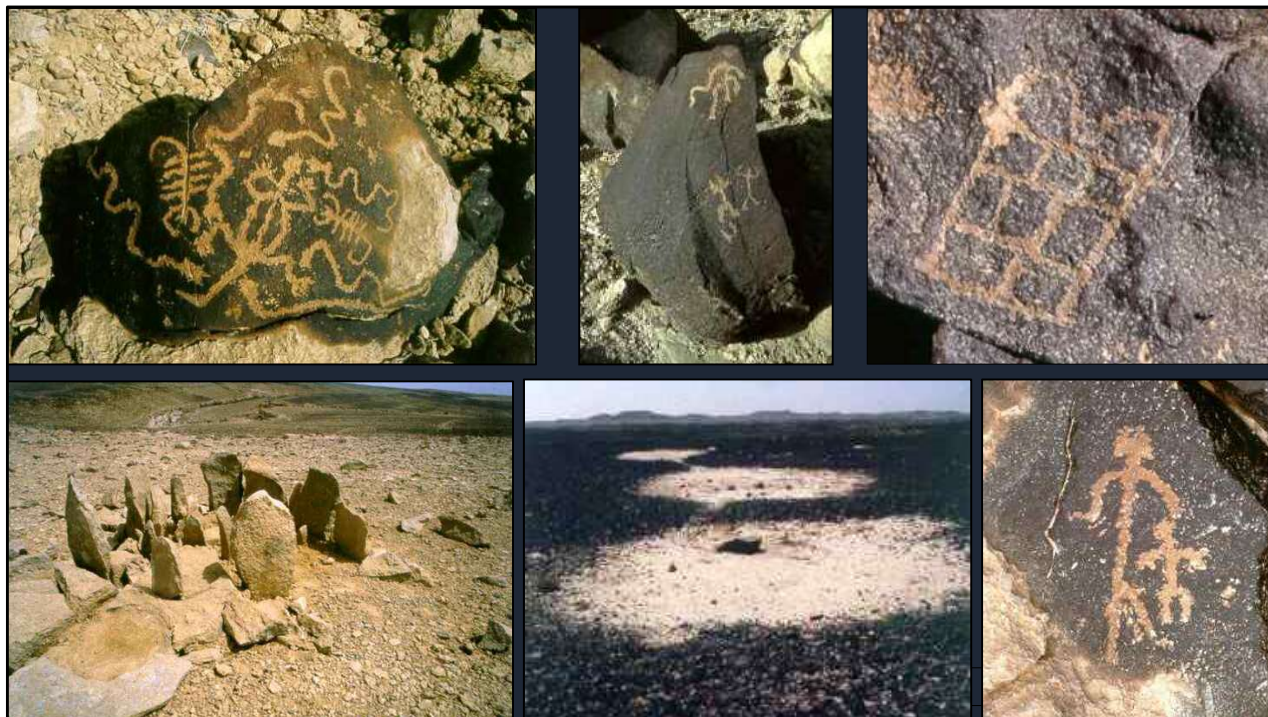


### **PLATEAU, PEAKS**

Har Karkom is not so much a mountain as a plateau, about 4 km long by 2 km wide, and about 800 m ASL. It is eery and otherworldly on top of the plateau; the blackened tessellated surface of flint, called *hammada*, seems to go to the horizon. From the central plateau you can see nothing beyond or below it. These are the only two peaks on the plateau; they are not very high from their base, about 70 m, a long one and conical one. I took this picture in 2004.

That is Anati in the centre... a distinctive profile... the old man of the mountain.





## ANTIQUITIES

Here are some of the antiquities found on and around the mountain. The earliest artifacts date from the Upper Paleolithic period.

There are over 10,000 archaeological sites, including dwellings, flint workshops, standing stones, petroglyphs, geoglyphs, shrines, and altars. This mountain plateau has been a sacred site to nomads, migrants, pilgrims and traders in many eras.

The concentration of cultic remains led Anati to identify the site as Mount Sinai in 1983 after three years of surveying the remains in the region. He has worked for over 30 years to demonstrate his theory, with annual surveys and prolific publications.

Because of the nature of the remains here and across the Central Sinai and Negev, Anati insists that the exodus and wanderings traditions must have their historical roots in the Early Bronze Age, rather than the Late Bronze Age of the standard chronology. But more on that later.





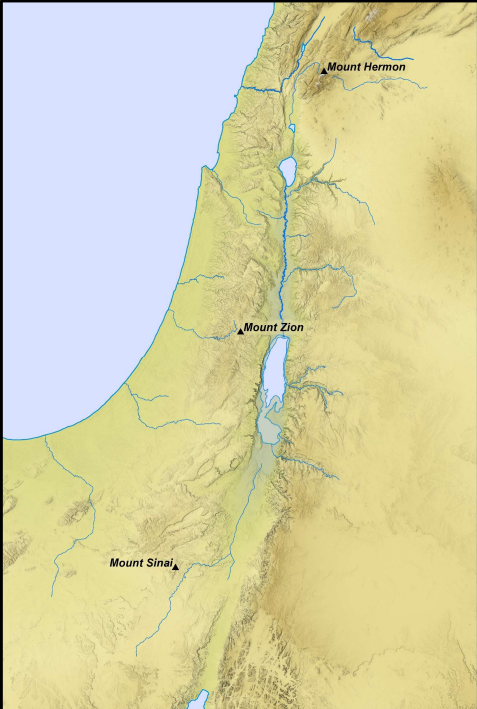
## SINAI CANDIDATES

There are at least a dozen candidates for the biblical Mount Sinai, some of them are only one-scholar proposals.

They can be grouped broadly into regions: North Sinai, Central Sinai, South Sinai, Jordan, and Saudi Arabia.

I would say there are really only 3 serious contenders: Jebel Musa in the Southern Sinai is the traditional Byzantine site; Jebel al Lawz in Saudi Arabia has recently become popular with the public; and Har Karkom is in the Central Negev Highlands.

This mountain is popular with Israelis, of course, largely because it is inside Israel's borders. As a newspaper headline said when Prof Anati first proposed it, "Har Sinai beyadenu!" "Mount Sinai is in our hands!" It is a military cry.



## 1 Range, 3 Holy Mountains

- **Psa 133:3** It is like the dew of **Hermon**, which falls on the mountains of **Zion**. For there the LORD ordained his blessing, life forevermore.
- **Psa 68:15-18** O mighty mountain, mountain of Bashan [**Hermon?**]... Why do you look with envy... at the mount [**Zion**] that God desired for his abode, where the LORD will reside forever?... the Lord came from **Sinai** into the holy place. You ascended the high mount [**which?**], leading captives in your train and receiving gifts from people...
- **Mat 17:1-3** Jesus.... led them up a high mountain [**Hermon?**].... And he was transfigured before them, and his face shone like the sun, and his clothes became dazzling white. Suddenly there appeared to them Moses [**Sinai**] and Elijah [**Zion**], talking with him.

### 3 HOLY MOUNTAINS

Perhaps it seems very unlikely to you that Mount Sinai could be so far north, close to Canaan. We tend to think of it as a remote and isolated place. But maybe this map will help to shift the paradigm. Har Karkom is the southernmost peak of the range of mountains which forms the 'spine' of Israel. The Central Hill Country comes to an abrupt end at Har Karkom in the Central Negev. As the first peak encountered when approaching from the south, Har Karkom marks the southern gateway to the Mountains of Israel where the biblical story plays out. Other significant mountains in the same range are snowy Mount Hermon at the northern end (Judg 3:3; Psa 133:3) and Mount Zion (Jerusalem), the holiest of all, in the middle (2 Kgs 19:31; Psa 2:6). Over a distance of about 400 km from north to south, the three peaks are evenly spaced, about 200 km apart. So with the Karkom identity, Sinai and Hermon are at the extremities, with Zion in the middle. Psalm 133 links Hermon and Zion. Psalm 68 has a mountains theme, mentioning only Sinai by name, but alluding to the others. And for Christians, the vision of Jesus' transfiguration is probably set on snowy Mount Hermon, with Moses representing the Law, given at Sinai, and Elijah (Eliahu), representing the Prophets, who were largely based in Jerusalem, or Zion.



## **MOUNT PARAN**

Here is the arena for the biblical exodus and wanderings itinerary... the Sinai Peninsula. In relief maps you can see the Karkom formation quite clearly... once you know where it is. From above it looks like a finger pointing southward into the Paran flood-plain. Interesting that in Deuteronomy 33:2 and Habakkuk 3:3, Mount Sinai is also called Mount Paran.

But this presentation is not about the location of Mount Sinai specifically. It is about a new geography of the exodus and wilderness wanderings, one that arose from the discovery of a hydrological model for the biblical wildernesses.





## MODERN REGIONS

I have had three cartographers, so I have quite a collection of different styles and colour schemes.

Just to set the scene, here are the Bible lands with their current names and national borders.

I have turned the map on its side to fit the frame, so East is at the top. Sorry if that is disorienting.

The geopolitics of the Near East has changed a lot over millennia, but many of the biblical names are still in evidence.



### **RIVER CATCHMENTS**

While investigating the exodus itinerary, I suspected that the wildernesses were possibly connected to the major river catchments. I can't remember exactly when or how this revelation occurred, but it may have been with this NASA satellite photo. You can see the great river catchment of Wadi el-Arish in the middle of the Sinai Peninsula. It looks like a leaf, with its stem in the Mediterranean Sea, and all its tributaries like the veins. At the time I was considering identifying the Central Sinai Plateau as the Wilderness of Sin (the moon-god Sin] which features in the Israelite journey from Egypt to Mount Sinai. Exodus 16:1 and Numbers 33:10-12 both state that the Wilderness of Sin lies between Elim (on the Red Sea coast) and Mount Sinai. If Har Karkom is Mount Sinai, then this is one example for which a hydrological model works well. It is not a proof, but I noticed that this distance is almost entirely taken up with a single river catchment. Once I discovered this ancient system of defining wildernesses, progress with locating and identifying the routes and sites became possible. I assumed that every station of the itinerary lies within a named wilderness or national territory. Then I paid close attention to where the wilderness names appear in the itineraries. Over time a hydrological model of the wildernesses and national territories took shape.



### **PRIMARY CATCHMENTS**

But let's start with the foundational catchments, the oceans, seas, and lakes. Here the map is east-oriented again here.

I asked my cartographers to make maps of all the major watersheds across the biblical arena.

They used data from the World Wildlife Fund, which uses watersheds to divide and identify habitats.

These are the three primary water-catchments of the biblical arena. All the water in the region ultimately drains into one of 3 base water-bodies, conveniently named the Med, Red, and Dead Seas.

The dark lines are the watersheds between the catchments. All water falling within these catchments drains to one of the seas. The Dead Sea is not strictly a sea, rather it is a lake system, but biblical Hebrew does not distinguish between them. Even Yam Kinnereth in Hebrew, is designated a 'sea', often known as the Sea of Galilee.





## SECONDARY CATCHMENTS

The secondary catchments are the great river systems within those primary catchments.

The secondary catchments of the Sinai, Negev, and Transjordan are here named for their central rivers or lakes. This map shows their current names, in Arabic or Hebrew. Small drainage systems along the coasts of the Red, Med, and Dead Seas are not shown.

A hydrological model matches the wildernesses and territories to these water-catchments, taking into consideration all biblical and extra-biblical indications. That the ancients would divide and define the land by its river-system makes sense to most people. Each water-catchment is its own ecological system, with unique climate, topography, flora and fauna. Here the catchments are named for their central rivers or lakes.



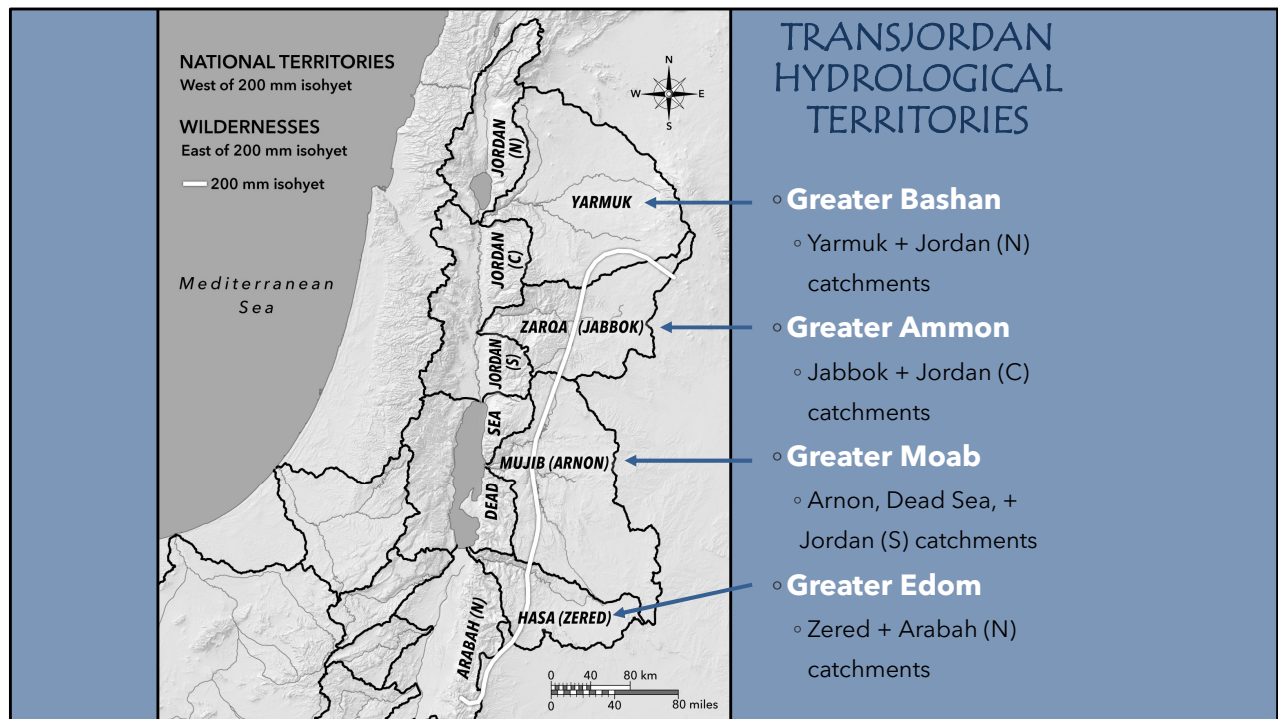
## WILDERNESSES AND TERRITORIES

Once the river systems and their watersheds were all mapped, it was possible to locate and delineate the biblical regions.

Here are the proposed names of the biblical wildernesses (with W. for 'wilderness'), and the national territories encountered in the Israelite journeys, mapped according to a hydrological model.

Some regions are single water-catchments; some comprise two or more catchments. Others are 'half-catchments', that is, the area between a central riverbed and its outer watershed on one side.

The white dotted lines dividing some of the river-catchments indicate a few tertiary catchments that are significant to the Israelite journeys.



## TRANSJORDAN

The hydrological model of biblical regions is especially enlightening in the Transjordan, despite a different geography to the Sinai and Negev. With higher elevation and more rainfall, there are four great perennial rivers, all with different ecologies. As it happens, there are also four greater national territories of the biblical era, corresponding to the river-catchments.

The Bashan never takes a national name, but the other three national territories are named for Abrahamic nations.

The white line represents the 200 mm rainfall line, beyond which you cannot grow crops.

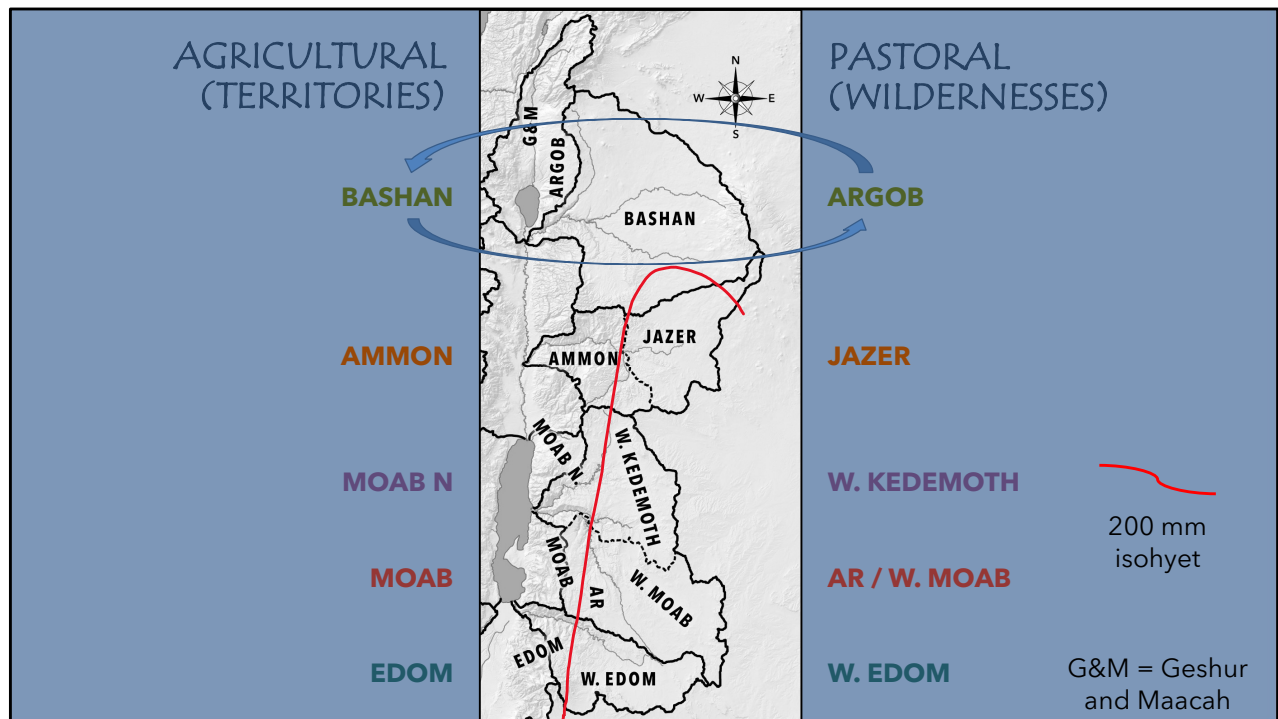
This line divides the agricultural regions to the west from the pastoral regions to the east.

Hence the core national territories lie to the west of this line, their wildernesses to the east.

Greater Bashan has a high rainfall throughout, as you see here, and rich volcanic soil.

Hence it is a lush breadbasket even today, as evidenced by the high number of towns in southwestern Syria.





## AGRICULTURAL VS PASTORAL

Each national territory of the Transjordan has a pastoral wilderness within the same water-catchment.

So Edom and the Wilderness of Edom both lie within the Zered river-system. Moab and its pastoral Wilderness of Moab both lie within the southern Arnon river-system.

Northern Moab and its pastoral Wilderness of Kedemoth both lie within the Northern Arnon river-system.

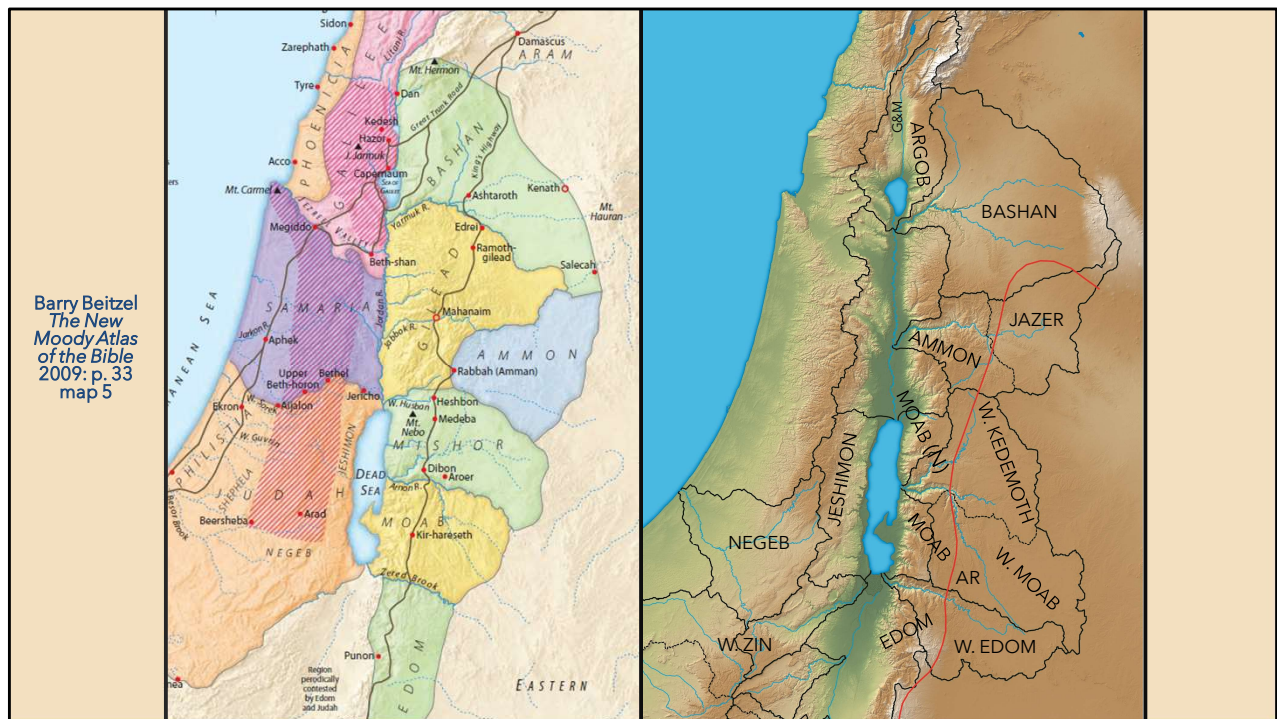
Ammon and its pastoral wilderness of Jazer both lie within the Jabbok river-system.

The Bashan and its pastoral wilderness, the Argob, both lie within the Yarmuk river-system.

Only the Argob lies to the west of its mother country, the Bashan, because the pattern is reversed in the north.

The Argob is also a separate water-catchment, the eastern Galilee, from Hermon to the Yarmuk river-mouth.

After the Israelite conquest, the western Galilee becomes the tribal territory of Naphtali.

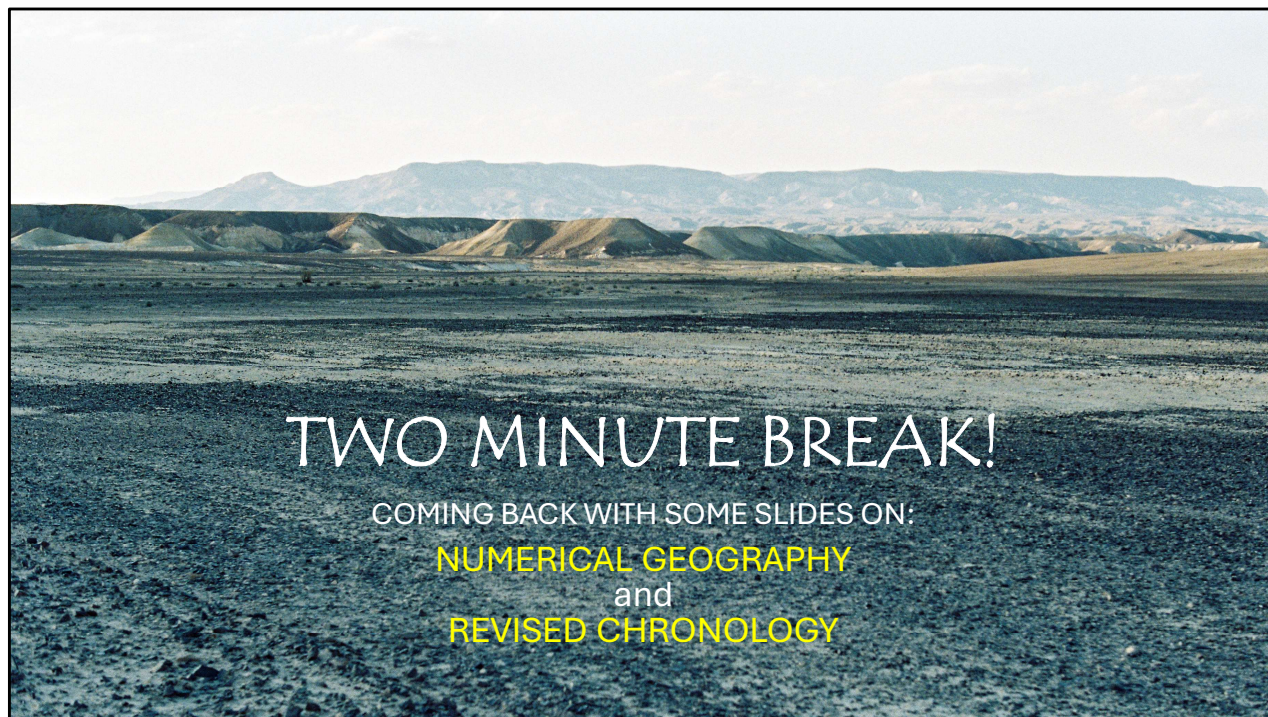


## MAP COMPARISON

So let's compare the best map I could find of the Transjordanian territories; that is, Prof Barry Beitzel's map of the biblical districts in the Moody Bible Atlas, 2009. In this map (on the left) of biblical districts, Beitzel makes an effort to trace the national territories and geographical regions in the Transjordan. As you see, the eastern borders of all the national territories are sketchy and arbitrary. He hasn't tried to locate the wildernesses of the Transjordan: of Edom, Moab, or Kedemoth. Few atlases try to represent the obscure regions of Ar in Moab or the Argob of Bashan.

With a hydrological approach (on the right), all the wildernesses and national territories are represented. The beauty of this new model of identifying the biblical regions is the methodology. The hydrological elements of this new model are the riverbeds, watersheds, and a rainfall line. Such a model also gives precise boundaries for all the wildernesses and national territories.

Finally, this arrangement of biblical regions makes a wilderness itinerary solution possible.



### **BREAK**

Take this time to get up, stretch, jot down some questions, and chat to your neighbour.

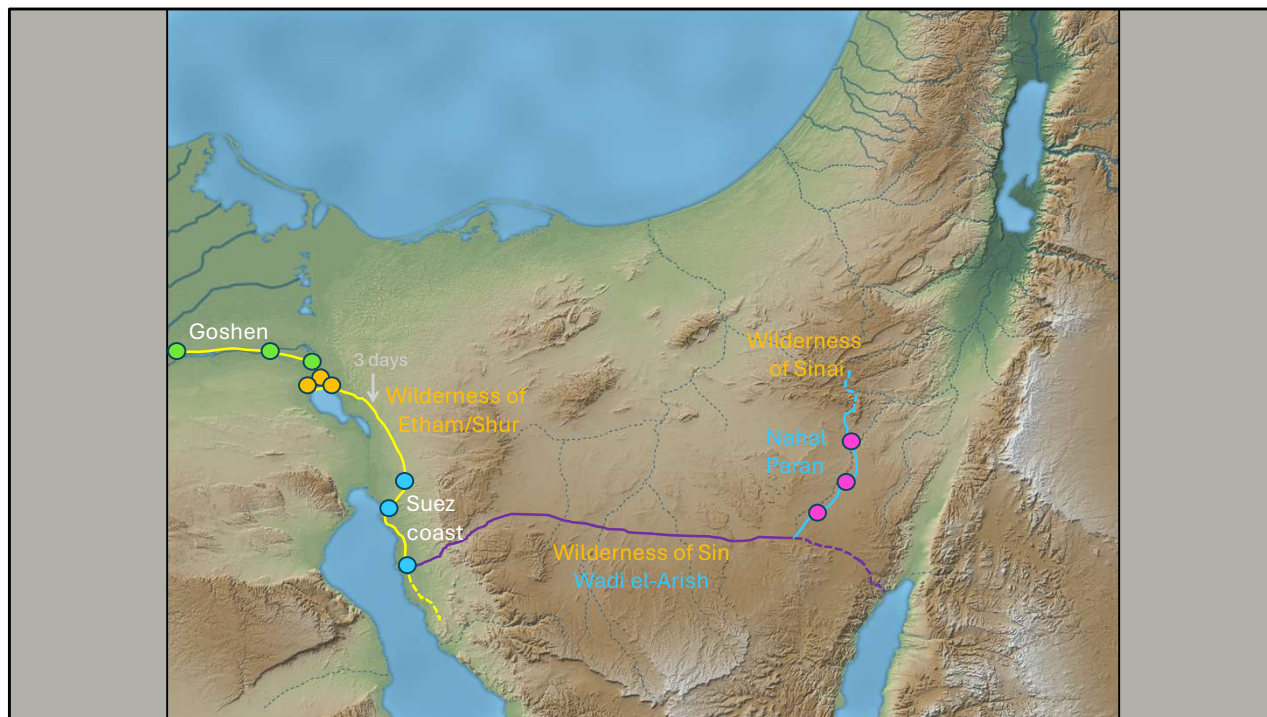
As promised in the flyer, I will preview some of the astonishing numerical patterns in the biblical narrative.

### **RESUMING**

This is the view of the Karkom Plateau from down in the Paran riverbed as it runs by the east side.

The plateau has a 'horn', a kind of pyramid on its southern end. With that and the sphinx face on the western side and other suggestive cultic geographical features, there may be some extra reasons why this mount was holy to the desert peoples for millennia.





## EXODUS ROUTE

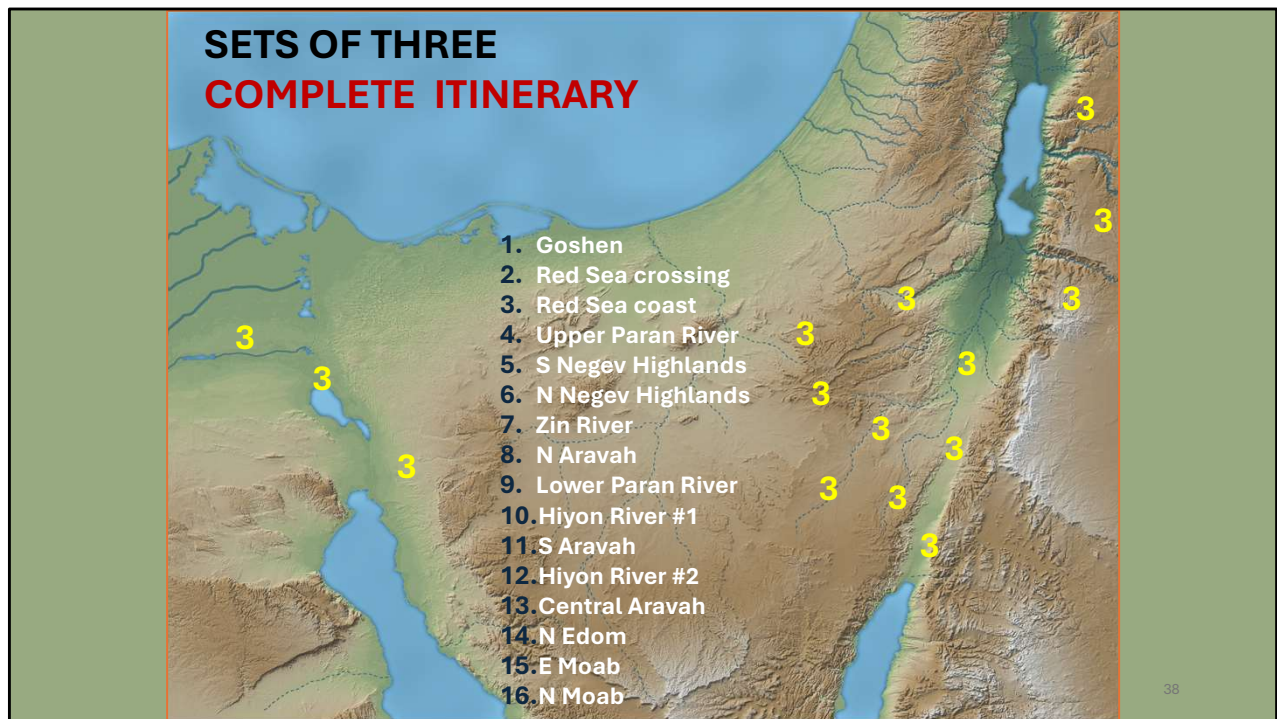
There is something else going on with the wilderness itineraries that I didn't expect. The geography turned out to be a grand mathematical system also. I call it Numerical Geography and it is a whole topic of its own; I will only show you the basics.

This is my proposed exodus route across the Central Sinai to Mount Sinai at Har Karkom. I have not named the stations so as to keep the map uncluttered, but I have coloured them by region. There are sets of 3 stations, interspersed with sets of 3 features, starting in Goshen and continuing to Mount Sinai. There are 3 sites in Goshen [green dots], 3 sites at the Red Sea crossing [orange dots]; 3 days without water in the Wilderness of Etham/Shur, and 3 sites down the Suez coast [blue dots].

The purple road is the ancient trade route across the Central Sinai from gulf to gulf, was surveyed by Beno Rothenberg in 1967. It is called the Darb es-Shawi, and crosses the Wadi el-Arish river catchment, the Wilderness of Sin. The Darb es-Shawi has Bronze Age remains and even a Crusader-era fort and is the original traders' route between Egypt and Arabia. It predates the Darb el-Hajj of the Islamic era that runs about 25 km to the north.

In the biblical itinerary there are no named stations in the Wilderness of Sin, the

Israelites just enter it and leave it. By my rules for biblical geography, this means there are no perennial water-sources along this road. And there really are no springs along this Central Sinai road. Travellers had to dig for water in the wadi beds. Then there are 3 sites that come *after* leaving the Wilderness of Sin and *before* entering the Wilderness of Sinai [pink dots]. And the journey follows 3 ancient roads, though only one is named in the exodus narrative. After this insight, sets of 3 started appearing everywhere I looked.



## ITINERARY

Not only that, each set of three stations lies in a different geographic region. I was astounded to find that the integrated itinerary proceeds in sets of 3 named stations all the way from Goshen to the Jordan. That is, all the named stations from Exodus, Numbers, and Deuteronomy in order of arrival, with each set of 3 stations in a different geographical region. So that's 15 sets of 3 named stations. 45 distinct names. But because they visited one of these sets of 3 stations twice in the wilderness era, once at the beginning and once at the end, I can double one set, to give 48 named stations in all.

And there are many other sets of 3 in the narrative; I haven't even found them all. For example, their journey from Goshen to Sinai took 6 weeks. There are 3 destinations or terminals: Sinai, Kadesh, and the Jordan River. There are also 3 times the nation travelled for 3 days without water. There are also 3 sites mentioned that delimit their final campsite in the southern Jordan Valley. And at the end of their journey, Balaam [Bila'am] curses Israel from 3 locations. So it all gets a bit crazy.



## SETS OF 10

PLAGUES, COMMANDMENTS, WILDERNESSES,  
NATIONAL TERRITORIES, GEOZONES, ROADS



$$10 = 9+1 \quad 9 = 3 \times 3$$

### SETS OF 10

There are also many sets of 10 elements in the wilderness narrative: plagues, commandments, wildernesses, national territories, geozones, and roads.

All these sets of 10 divide into 9+1, where the 1 does not conform to the 9 in some way, and then the 9 divides further into triads by theme or type. Let me explain.

## REGIONS: TOPONYMICAL TYPE

### WILDERNESSES

1. SHUR<sup>+</sup>
2. ETHAM<sup>+</sup>
3. RED SEA<sup>+</sup>
4. SIN<sup>+</sup>
5. SINAI<sup>+</sup>
6. PARAN<sup>+</sup>
7. ZIN<sup>+</sup>
8. MOAB<sup>+</sup>
9. KEDEMOTH<sup>+</sup>
10. [EDOM]<sup>+</sup>

### NATIONAL TERRITORIES

1. EGYPT<sup>\*</sup>
2. MIDIAN<sup>\*</sup>
3. GOSHEN/RAMESES<sup>\*</sup> (Egypt)
4. EDOM<sup>\*</sup>
5. MOAB<sup>\*</sup>
6. AR<sup>(\*)</sup> (Moab)
7. AMMON<sup>\*</sup>
8. JAZER<sup>\*</sup> (Ammon)
9. PLAINS of MOAB
10. [CANAAN]<sup>\*</sup>

### GEOZONES

1. HILL COUNTRY<sup>#</sup> (Amorites)
2. NEGEB<sup>\*\*</sup>
3. (MOUNT) SEIR<sup>\*</sup>
4. ARABAH<sup>\*\*</sup>
5. MISHOR<sup>\*\*</sup>
6. (MOUNT) GILEAD<sup>\*\*</sup>
7. BASHAN<sup>\*\*</sup>
8. ARGOB<sup>#</sup>
9. MOUNTAINS of ABARIM<sup>#</sup>
10. [JESHIMON]<sup>#</sup>

+ מִדְבָּר "wilderness of"    \* אֶרֶץ "land of" at least once    # הַ- "the" at least once

## SETS OF 10 REGIONS

While I was collating all the regional names for my dissertation, I discovered that the Israelite journeys involves 30 named geographic regions. These may be arranged into 3 groups of 10 according to their toponymical forms.

In the Hebrew Bible, the wilderness names are *always* constructed with *midbar* (meaning 'wilderness').

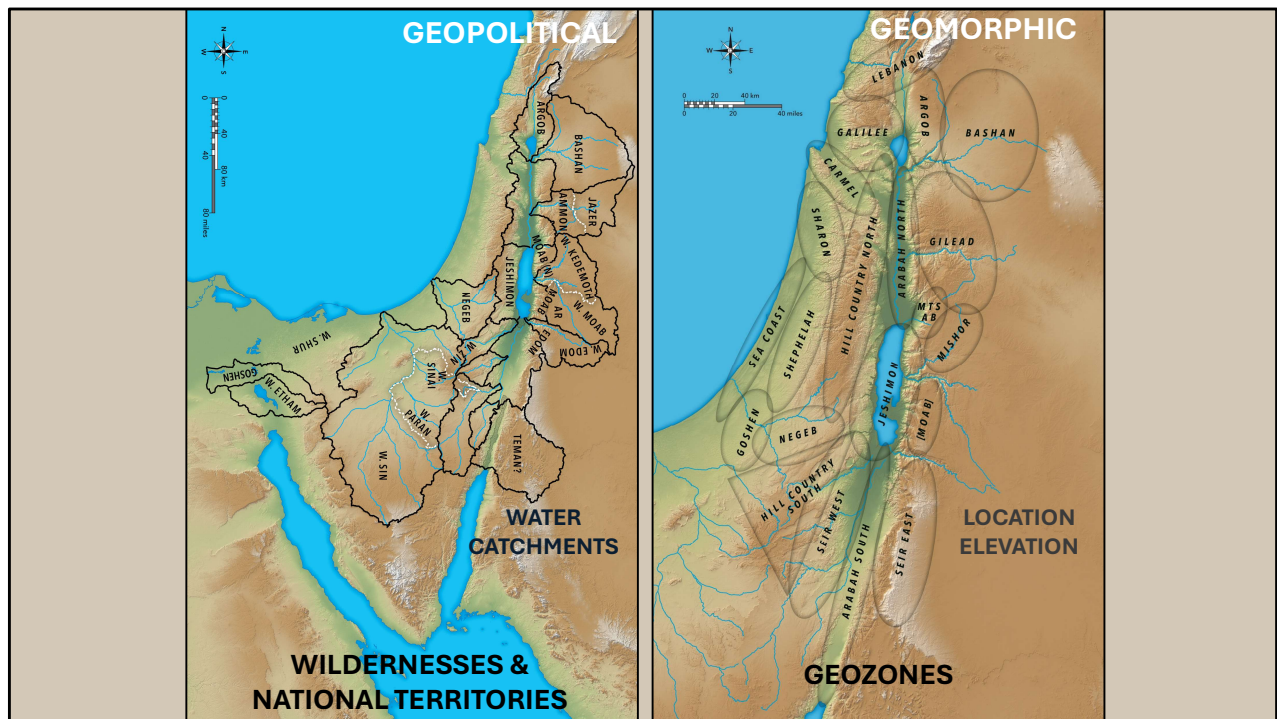
The National Territory names are constructed with *eretz* (meaning 'land') at least once in the Hebrew Bible.

The Geozones are prefixed with *ha-* (the definite article) at least once in the Hebrew Bible.

There are a few variations and one exception, but the rule is otherwise consistent and predictive.

The 10th region in each category is one that does not conform to the other 9.

In the wilderness narrative, these 10th regions are named but not traversed, or traversed but not named.



## GEOZONES

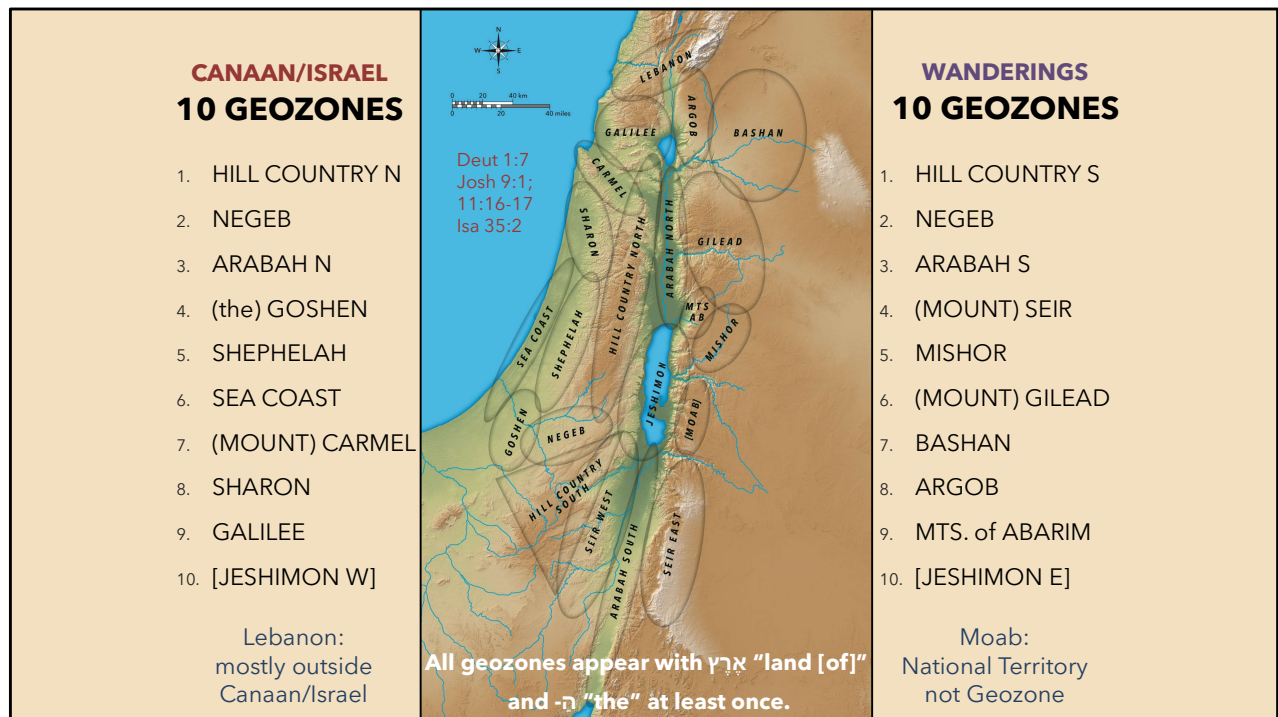
The Wildernesses and National Territories are *geopolitical* regions, inhabited by nations and tribes throughout the biblical period. They are determined hydrologically, that is, they are identified with the great river catchments of Bible lands.

The Geozones, however, are *geomorphic* regions, determined topographically, that is, by elevation and location relative to their neighbours. So Geozones have 'fuzzy' borders; they overlap or transition from one to the next. They are large blocks of land, whether mountain range, tableland, depression, or coastal plain. [The Bashan is unique, both geozone and whole water-catchment.]

Thus, there is no competition between *geomorphic* and *geopolitical* regions; they are identified and delineated by different principles and must be mapped separately. The geozones underlie the wildernesses and territories, and share the same terrain. This revelation helps a lot in resolving apparent geographical contradictions.

Bible cartographers have been trying to cram all these regions into one map, trying to make them mutually exclusive or equivalent... not understanding the different determinants.





## 10 GEOZONES

The 10 geozones of the Negev and Transjordan are matched by 10 geozones in the Cisjordan also. Their toponyms also appear at least once in the Hebrew Bible with the definite article.

Among the 10 geozones of the Cisjordan, the Lebanon is the one that does not conform to the 9, as it lies only partially within the borders of Israel.

## 10 ROADS: "WAY OF" ... דֶּרֶךְ *derekh*

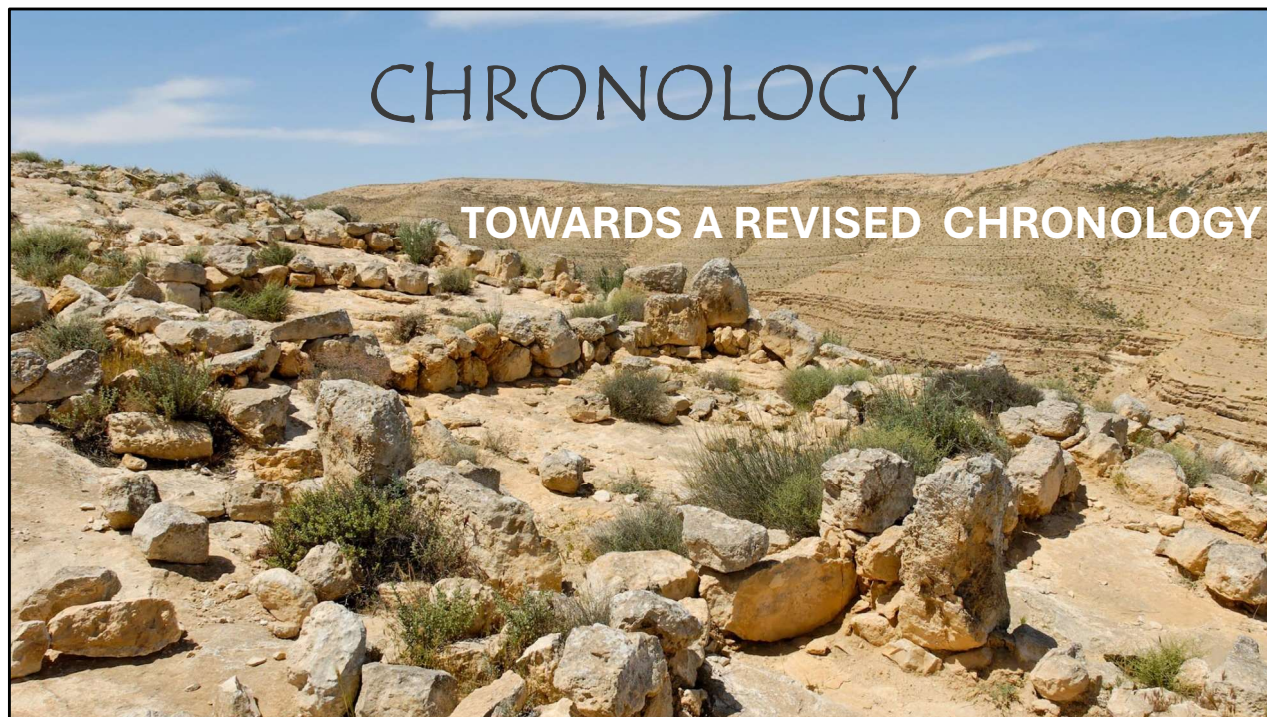
1. [THE LAND OF THE PHILISTINES] (Ex 13:17)
2. THE WILDERNESS OF THE RED SEA (Ex 13:18)
3. THE HILL COUNTRY OF THE AMORITES (Deut 1:19)
4. MOUNT SEIR (Deut 1:2)
5. THE RED SEA (Num 14:25; 21:4; Deut 1:4; 2:1)
6. THE ATHARIM (Num 21:1)
7. THE ARABAH (Deut 2:8)
8. THE WILDERNESS OF MOAB (Deut 2:8)
9. THE KING (Num 20:17, [v.19]; 21:22; [Deut 2:27])
10. THE BASHAN (Num 12:33; Deut 3:1)

### 10 ROADS

But wait! There's more! You can see now why we needed a short break. As well as the 10 named regions in each category, there are also 10 named roads of the Israelite journeys. These toponyms always appear constructed with *derekh*, meaning "Way of...". The one road that does not conform to the 9 is the Way of the Land of the Philistines, which is named but not traversed according to Exodus 13:18. Thus the entire substructure of the wilderness itinerary is organised in sets of 10: all the wildernesses, national territories, geozones, and roads. The biblical authors' simple toponymical system for distinguishing 3 types of geographic regions has gone unnoticed until now.

I do not know why the wilderness itinerary is arranged like this. This is a divine text in my assessment.

My supervisor suggested it was a mnemonic device to memorise the journeys. But the elements are disassembled and distributed throughout the narrative in an apparently undesigned and unselfconscious way. The pattern only emerges with an integrated itinerary. Once you have done that, it certainly is a mnemonic device. Because of the sets of 3, I can recite in order all 48 stations, and all the wildernesses, national territories, roads, regions, and many narrative elements that come in sets of 3, and sets of 3 plus 1.



## **CHRONOLOGY**

So finally, as promised in the flyer, I will also briefly address the issue of chronology.

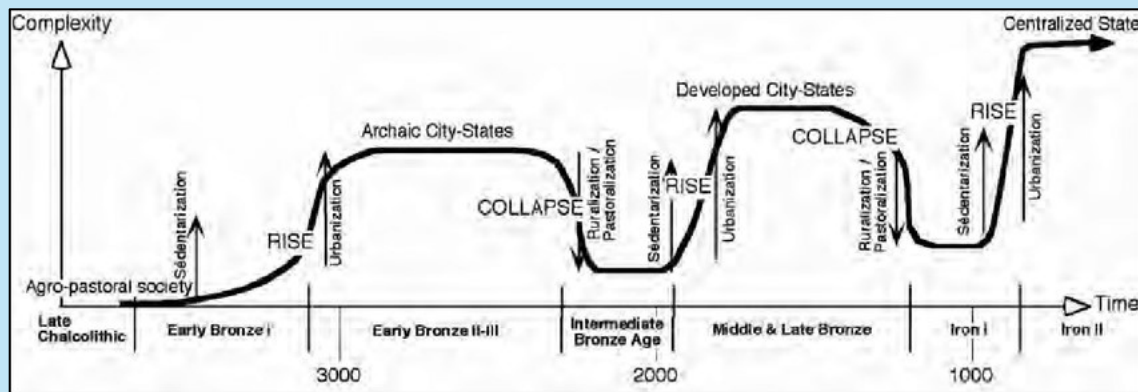
I usually try to avoid it. But then, usually, the first question is about the date of the exodus.

In the field of Ancient Near East history, the ‘Standard Chronology’ has existed for only 100 years. This also is about the age of the modern field of archaeology, when in the early 20<sup>th</sup> century, the famous Egyptologist W. M. Flinders Petrie was the first to recognize the importance of the development of pottery styles, and developed a relative chronology of archaeological periods, which he called “Sequence Dating.”

And then in 1922, post WWI, in a Jerusalem meeting of only 4 participants (of whom one was just an observer), the dates for these different styles were decided and subsequently adopted by the emerging science, if you can call it such, of archaeology.



# RISE and FALL of CIVILISATIONAL COMPLEXITY



Pierre de Miroschedji, 2009. "Rise and Collapse in the Southern Levant in the Early Bronze Age." In *Scienze Dell'antichità: Storia Archeologia Antropologia*, 15:101-29.

## RISE AND FALL

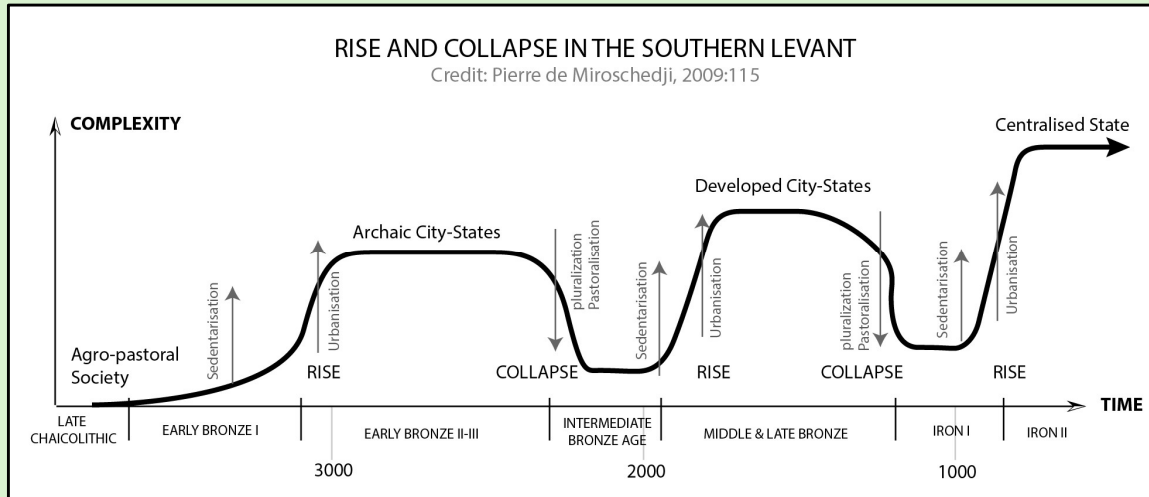
This is a diagram I have copied out of Pierre de Miroschedji's 2009 article about the rise and collapse of civilisational complexity in the Southern Levant during biblical times.

The horizontal axis is time and the vertical axis is overall complexity of civilisation.

The graphic is blurry because it is a screen shot of a scan. But I have reproduced it to make it clearer. That's in the next slide.

Apologies to De Miroschedji for repurposing his diagram. I am sure he would not approve.

# STANDARD CHRONOLOGY



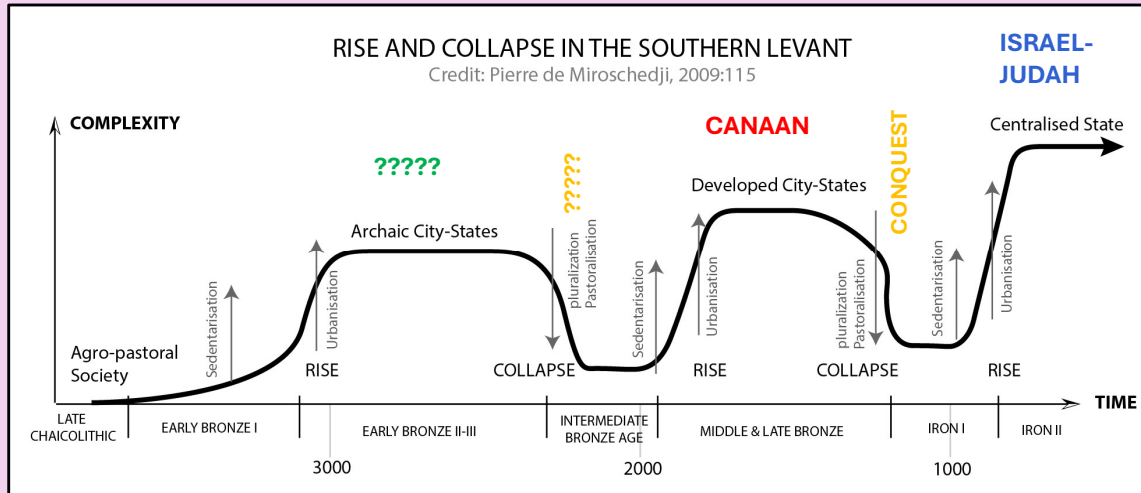
## STANDARD CHRONOLOGY

This is the same graph reproduced exactly. One of my sons is a graphic designer, so I got him to recreate it.

De Miroschedji's timeline gives the archaeological eras according to the standard chronology.

Note that there are only two collapses of civilisation throughout the biblical period from the Chalcolithic to the Iron Age.

# WHICH COLLAPSE IS THE CONQUEST?



## WHICH COLLAPSE?

According to the standard chronology, the Middle and Late Bronze Age is Canaan, and the Iron Age is Israel and Judah.

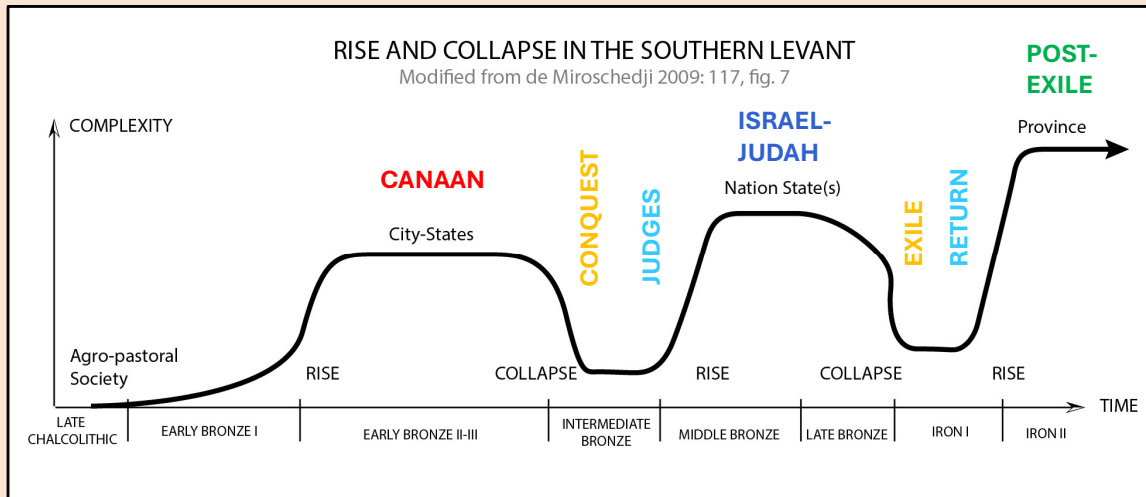
Therefore the Israelite conquest of Canaan comes between them, which is the second of the two collapses of civilisation.

Also according to the standard chronology, the first rise and collapse of civilisation is undocumented in history, and the politics are unknown.

But 20<sup>th</sup> century archaeology revealed that the collapse in the LBA and IA1 doesn't fit the story of the conquest at all well. The collapse is relatively slow, and the city destructions do not match the city list in Joshua 12. Some of those cities were already unoccupied at the time, Jericho, for example. And it seems to be much the same population before and after the collapse, just drastically reduced.



# REVISED CHRONOLOGY



## REVISED CHRONOLOGY

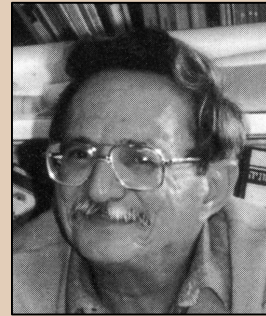
Here is the same diagram relabelled for a possible revised chronology. I wish to make it clear that this is a modified version of De Miroshedji's graph. He would not like what I have done here, and my relabelling of his diagram has nothing to do with him. But I have borrowed his diagram because this line-graph showing the rise and collapse of civilisation in Bible lands is accepted. I stripped out all the dates and the unnecessary labels, but I left the archaeological eras where they were along the bottom axis: Early Bronze, Intermediate Bronze, Middle Bronze, Late Bronze, Iron 1 and 2. Then I relabelled the Early Bronze civilisation as Canaan, the Middle and Late Bronze civilisation as Israel, and the Iron Age as the exilic and post-exilic Babylonian- and Persian-dominated province.

I would suggest that these two collapses of civilisation are evocative of the two great invasions as recounted in the Bible; first the conquest of the Canaanite civilisation by the Israelites at the end of the EBA; and then the Assyrian and Babylonian invasions of Israel and Judah starting in the late MBA and continuing all through the LBA. Note that the first collapse is much more abrupt. This matches the biblical description of Joshua's campaigns in Canaan. This is a powerful graphic. Once you have seen this pattern you can't unsee it.

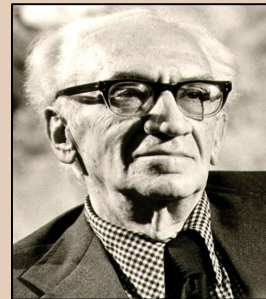
## IBA (MB1) = EXODUS-CONQUEST

- “I [David Down] asked him [Yigal Yisraeli] whether he agreed with Dr Cohen's views identifying the MB1 people with the Israelite migration. Without hesitation he replied, ‘Of course I do, and so do all the archaeologists down here.’”
- “I [David] said, ‘The archaeologists in the north do not accept it.’ He [Yigal] replied, ‘They do not know what they are talking about.’”

• David Down, *Diggings Online*, 2002.



Rudolph Cohen



Immanuel Velikovsky

### IBA/MB1 = EXODUS-CONQUEST

Immanuel Velikovsky proposed this revision mid-20<sup>th</sup> century. He was not an archaeologist; he was a psychoanalyst and what some call a catastrophist, and he was strongly opposed by the archaeological establishment.

But there is a minority of archaeologists, past and present, who also believe this connection between the exodus and the IBA. Most notable was Rudolph Cohen, Associate Director of the Israel Antiquities Authority until 2005. He was one of the original surveyors of the Negev back in the 1950s, along with Emmanuel Anati, and Chalcolithic expert, David Alon, who also supported this view. They found IBA remains wherever you would expect to find exodus remains [MB1 has been renamed IBA]

This last slide is an anecdote by David Down, former editor of the *Diggings* magazine. He was at a dig being directed by Rudolph Cohen, and while they were there the regional archaeologist at the Beersheba office of the Israel Antiquities Authority, Yigal Israeli, came to inspect the dig.

THE  
END

\*\*\*

Q&A



Dr. Tali Erickson-Gini  
Dr. Deborah Hurn  
Emer. Prof. Larry Geraty  
June 2018

## THE END

So that's the story of my research, and an overview of my hydrological model of the biblical regions...

discovered to identify, define, and delineate the wildernesses and territories of the exodus and wanderings.

Prof Larry Geraty in California was my archaeology supervisor.

He was director of the Madaba Plains Project in Jordan for 40 of its 50 years.

Now, I would like to hear any questions and comments.



## DEUTERONOMY 1:1-2

**א** אלה הדברים אשר דבר משה אל-כל-ישראל בעבר הירדן: במדבר בערבה מול סוף בין-פארן ובין-תפל ולבן ותצלת ודי זהב.

**ב** אחד עשר יום מחרב דרך הר-שעיר עד קדש ברנע

- 1 These are the words that Moses spoke to all Israel beyond the Jordan – in the wilderness, on the plain opposite Suph, between Paran and Tophel, Laban, Hazeroth, and Di-zahab.
- 2 (By the way of Mount Seir it takes eleven days to reach Kadesh-barnea from Horeb.) NRSV

### A QUESTION on DEUT 1:1-2

The first two verses of Deut 1 can and should be read as one sentence, without punctuation and translators' additional words.

Such a translation is supported by Robert Alter, the NKJV, and Youngs Literal Translation.

Together these verses form an itinerary describing the distance between the southern Jordan Valley (where Moses spoke the words of Deuteronomy) and Mount Horeb (Sinai) at Har Karkom.

Rashi and other pre-modern commentators could only seek theological interpretations, but this passage does in fact make geographical sense as an 'ideal' 11-day itinerary from Horeb to Jordan.

See map following.



### DEUT 1:1-2 ROUTE

Here is my proposed route for the 11-day itinerary described in Deut 1:1-2. 12 stations divide the distance of 330 km into 11 days' journey at an average 30 km per day.

The journey follows established ancient roads, the central (cross-Negev) route being the Way of Mount Seir.