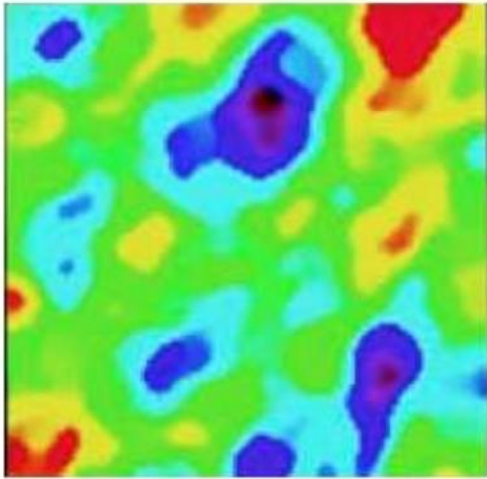
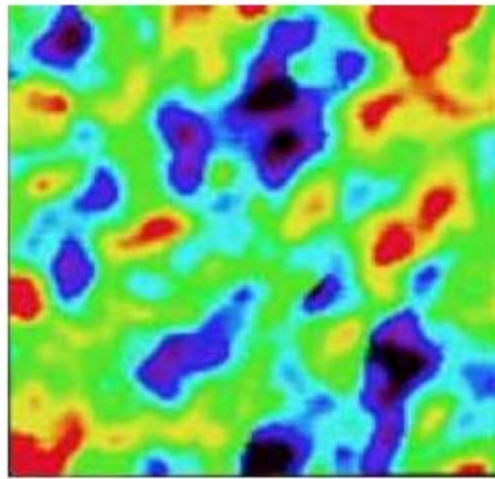
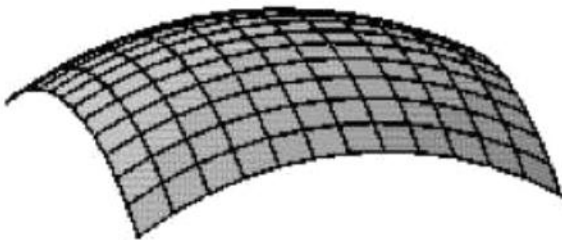


universe's age = 13.75 ± 0.11 Gyr



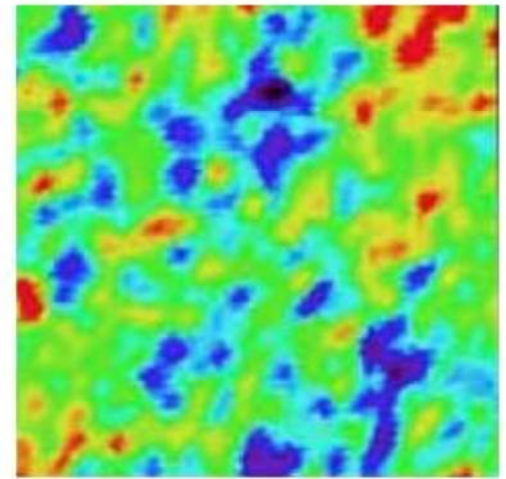
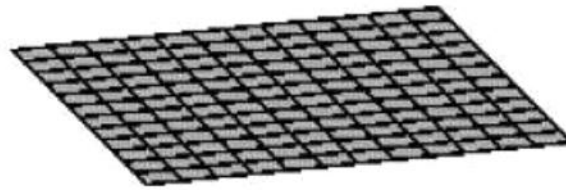
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$$\Omega_k < 0$$



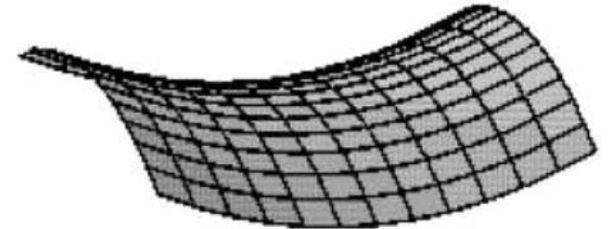
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$$\Omega_k = 0$$



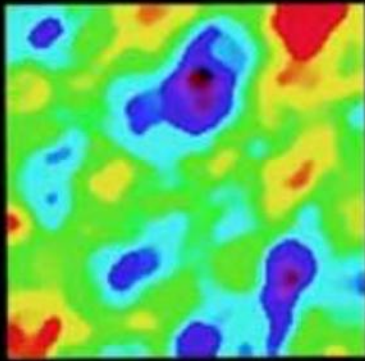
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$$\Omega_k > 0$$

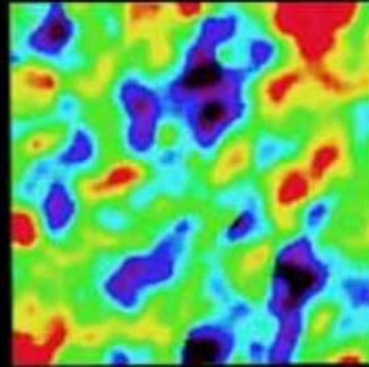
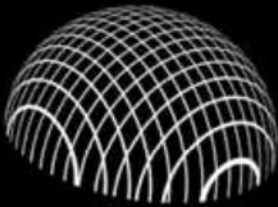


$$\Omega_k = 1 - \Omega_m - \Omega_\Lambda$$

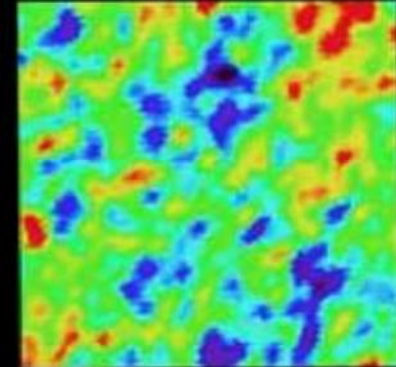
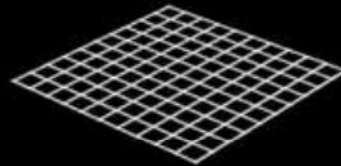
Cosmic Geometry Test



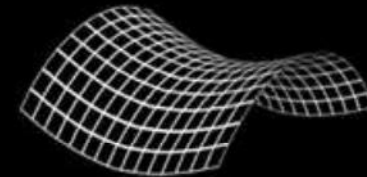
closed



flat



open



$$-0.199 < \Omega_k < 0.017$$

Cosmic Geometry Test

SNLS3 + SDSS7:

$$\Omega_k = -0.002 \pm 0.006$$

HST-CSNS:

$$\Omega_k = +0.002 \pm 0.005$$

Inflation Test

no inflation, $n_s \geq 1.00$

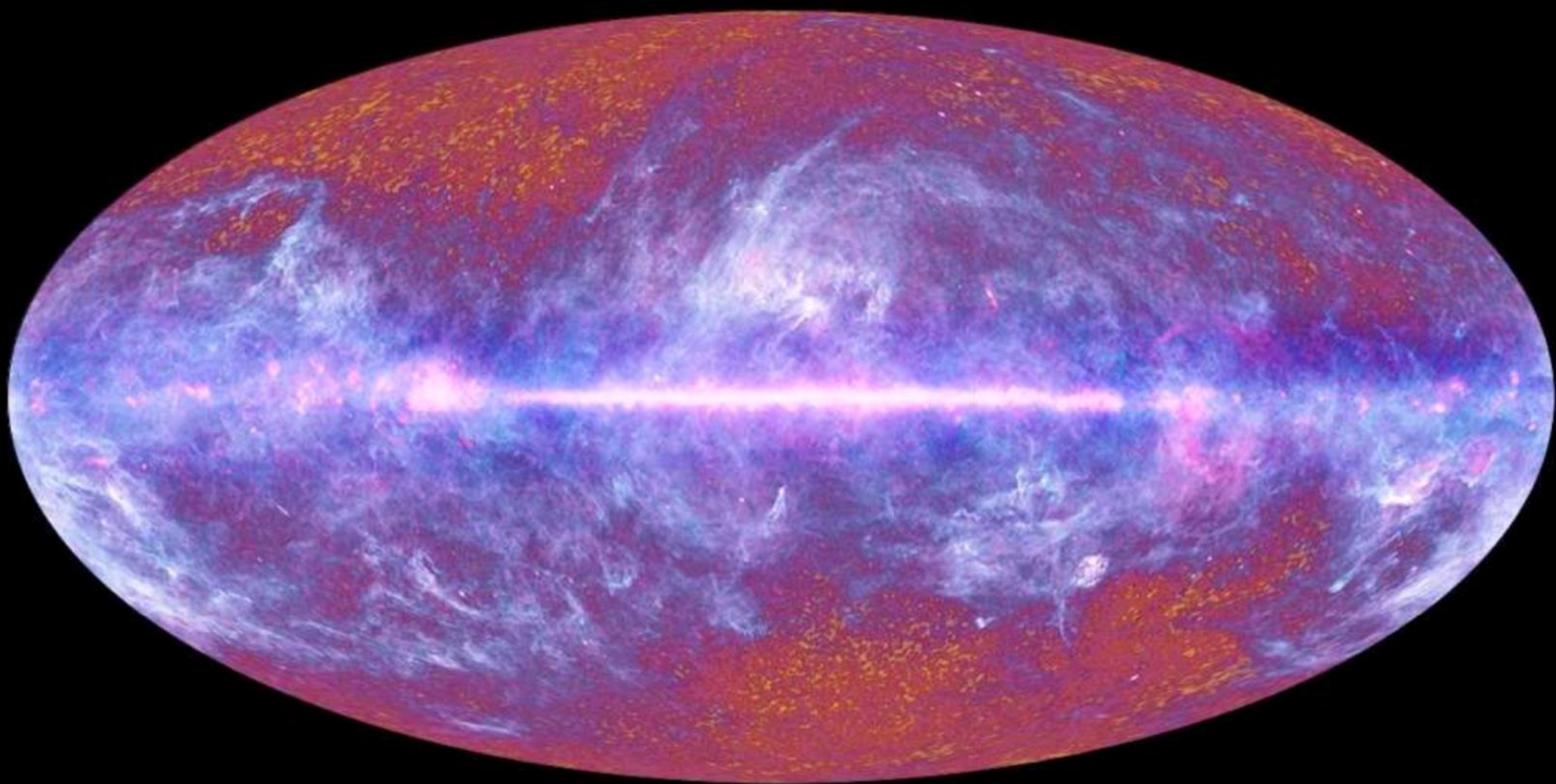
simple inflation, $n_s = .95$

complex inflation, $n_s = .96-.97$

Inflation Test

$$n_s = 0.963 \pm 0.012$$

7 year WMAP, SN, SDSS



earth, ¹⁸to govern the day and the night, and to separate light from darkness. And God saw that it was good. ¹⁹And there was evening, and there was morning—the fourth day. ²⁰And God said, "Let there be light," and God separated the light from the darkness, and let birds fly above the earth across the expanse of the sky." ²¹So God created the great creatures of the sea and every living animal that moves with which the water abounds according to their kinds, and every winged bird according to its kind. And God saw that it was good. ²²And God blessed them and said, "Be fruitful and increase in number and fill the water in the seas, and let the birds increase on the earth." ²³And there was evening, and there was morning—the fifth day. ²⁴And God said, "Let the land produce living creatures according to their kinds: livestock, creatures that move along the ground, and wild animals, each according to its kind." And it was so. ²⁵God made the wild animals according to their kinds, the livestock according to their kinds, and all the creatures that move along the ground according to their

kinds. And God saw that it was good. ²⁶Then God said, "Let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over every creeping thing that crawls on the ground." ²⁷So God created man in his own image, in the image of God he created him; male and female he created them. ²⁸God blessed them and said to them, "Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish of the sea and over the birds of the air and over every living creature that moves on the ground." ²⁹Then God said, "I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food. ³⁰And to all the beasts of the earth and all the birds of the air and all the creatures that move on the ground—everything that has the breath of life in it—I give every green plant for food." And it was so. ³¹God saw all that he had

made, and it was very good. And there was evening, and there was morning—the sixth day. ² Thus the heavens and the earth were completed in all their vast array. ³ And God blessed the seventh day and made it holy, because he rested from all his work. ⁴ This is the account of the heavens and the earth when they were created. ⁵ When the LORD God made the earth and the heavens—no shrub of the field had yet appeared on the earth and no plant of the field had yet sprung up, for the LORD God had not sent rain on the earth and there was no man to work the ground, but streams came up from the earth and watered the whole surface of the ground—⁶ the LORD God formed the man from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being.

⁸ Now the LORD God had planted a garden in the east, in Eden; and there he put the man he had formed. ⁹ And the LORD God made all kinds of trees grow out of the ground—trees that were pleasing to the eye and good for food. In the middle of the garden were the tree of life and the tree of the knowledge of good and evil. ¹⁰ A river watering the garden flowed from Eden; from there it was separated into four headwaters. ¹¹ The name of the first is the Pishon; it winds through the entire land of Havilah, where there is gold. ¹² (The gold of that land is good; aromatic resin and onyx are also there.) ¹³ The name of the second river is the Gihon; it winds through the entire land of Cush. ¹⁴ The name of the third river is the Tigris; it runs along the east side of Asshur. And the fourth river is the Euphrates. ¹⁵ The LORD God took the man and put him in the Garden of Eden to work it and take care of it. ¹⁶ And the LORD God commanded the man, "You are free to eat from any tree in the garden; but you must not eat from the tree of the knowledge of good and evil, for when you eat of it you will surely die." ¹⁷ The LORD God said, "It is not good for the man to be alone. I will make a helper suitable for him." ¹⁸ Now the LORD God had formed

Biblical Date for Adam

Calibration of Genesis 11 geneology puts Adam's time at 60,000 ± 30,000 years ago.

²⁶ Hebrew, Syriac all the wild animals

² Or ceased; also in verse 3 ³ Or land; also in verse 6 ⁶ Or must ⁷ The Hebrew for man (adam) sounds like and may be related to the Hebrew for ground (adamah); it is also the name Adam. (see Gen. 2:20) ¹² Or good; pearls ¹³ Possibly southeast Mesopotamia

earth, ¹⁸to govern the day and the night, and to separate light from darkness. And God saw that it was good. ¹⁹And there was evening, and there was morning—the fourth day.

²⁰And God said, "Let the water teem with living creatures, and let birds fly above the earth across the expanse of the sky." ²¹So God created the great creatures of the sea and every living animal that moves with which the water teems, according to their kinds, and every winged bird according to its kind. And God saw that it was good. ²²And he blessed them and said, "Be fruitful and increase in number and fill the water in the seas; and let the birds increase on the earth." ²³And there was evening, and there was morning—the fifth day.

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²⁸God blessed them and said to them, "Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish of the sea and the birds of the air and over every living creature that moves on the ground." ²⁹Then God said, "I will now put my blessing upon you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food. ³⁰And to all the beasts of the earth and all the birds of the air and all the creatures that move on the ground—everything that has the breath of life in it—I give every green plant for food." And it was so.

³¹God saw all that he had

made, and it was very good. And there was evening, and there was morning—the sixth day.

² Thus the heavens and the earth were completed in all their vast array.

³ And God blessed the seventh day and made it holy, because on that day he rested from all his work of creating that he had done.

⁴ This is the account of the heavens and the earth when they were created.

When the LORD God made the earth and the heavens—⁵and no shrub of the field had yet sprung up, for the LORD God had not sent rain on the earth^b and there was no man to work the ground,⁶ but streams^c came up from the earth and watered the whole surface of the ground—⁷the LORD God formed the man^d from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being.

⁸ Now the LORD God had planted a garden in the east, in Eden; and there he put the man he had formed. ⁹ And the LORD God made all kinds of trees grow out of the ground—trees that were pleasing to the eye and good for food. In the middle of the garden were the tree of life and the tree of the knowledge of good and evil.

¹⁰ A river watering the garden flowed from Eden; from there it was separated into four headwaters. ¹¹ The name of the first is the Tigris; it winds through the entire land of Assyria; it winds through the entire land of Cush. ¹² The name of the second river is the Euphrates. ¹³ The name of the third river is the Tigris; it runs along the east side of Assyria. And the fourth river is the Euphrates.

¹⁴ The LORD God took the man and put him in the Garden of Eden to work it and take care of it. ¹⁵ And the LORD God commanded the man, "You are free to eat from any tree in the garden; ¹⁶ but you must not eat from the tree of the knowledge of good and evil, for when you eat of it you will surely die."

¹⁷ The LORD God said, "It is not good for the man to be alone. I will make a helper suitable for him."

¹⁸ Now the LORD God had formed

Biblical Date for Flood

Dates for Abraham and Peleg permit calibration of Genesis 11 genealogy: Noah's flood = 40,000 ± 15,000 years ago.

²⁶ Hebrew, Syriac all the wild animals

² Or ceased; also in verse 3 ⁵ Or land; also in verse 6 ⁶ Or must ⁷ The Hebrew for man (adam) sounds like and may be related to the Hebrew for ground (adamah); it is also the name Adam. (see Gen. 2:20) ¹² Or good; pearls ¹³ Possibly southeast Mesopotamia

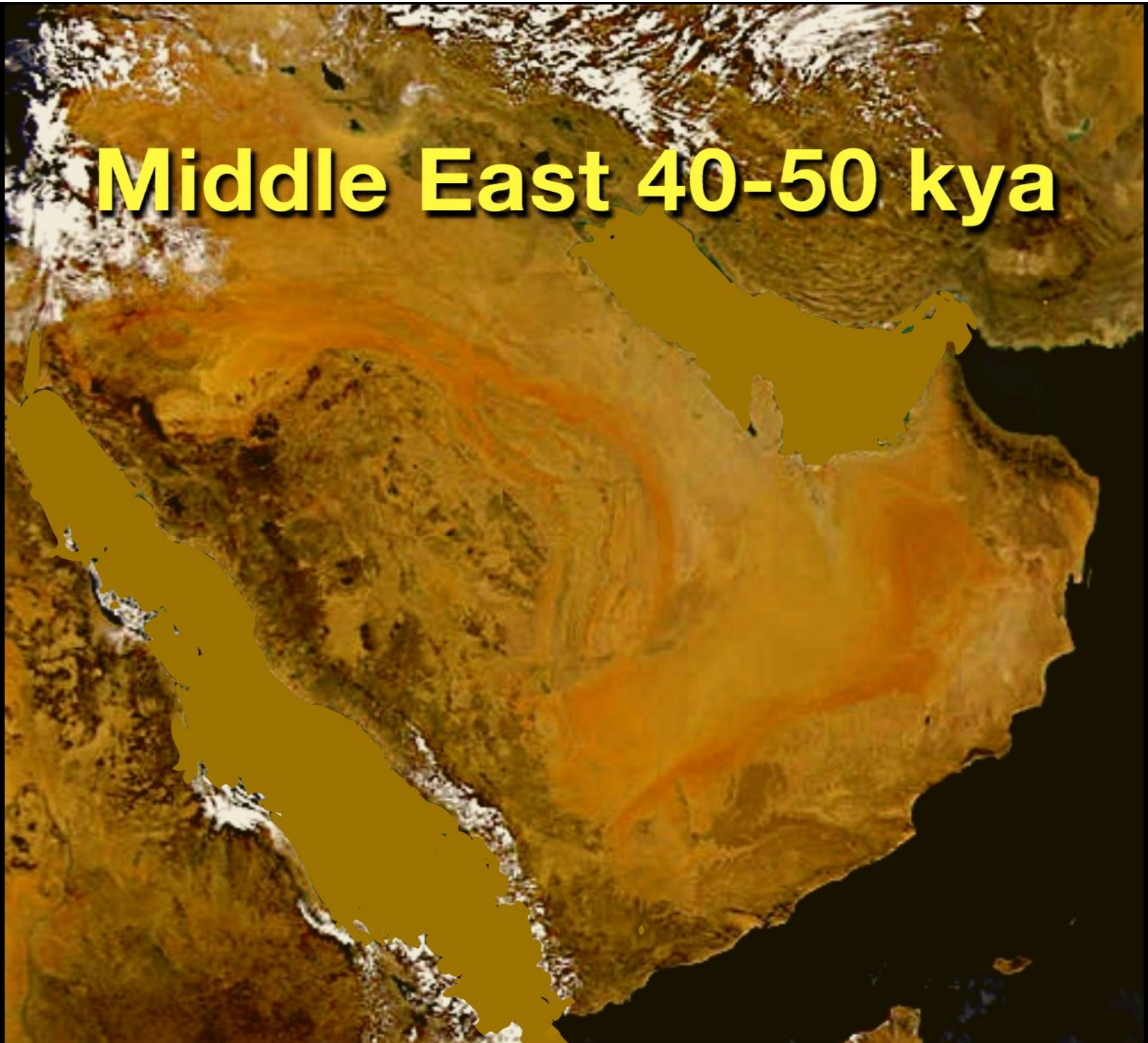
An aerial photograph of the Nile river valley in Egypt. The Nile river is a prominent dark blue-green feature winding through the golden-brown desert landscape. The river flows from the bottom center towards the top right. Three labels are overlaid on the image in white, bold, sans-serif font. 'Asshur' is at the top, 'Havilah' is in the middle, and 'Cush' is at the bottom. The labels are positioned to identify specific regions along the Nile valley.

Asshur

Havilah

Cush

Middle East 40-50 kya



Asshur

Nod

Eden 

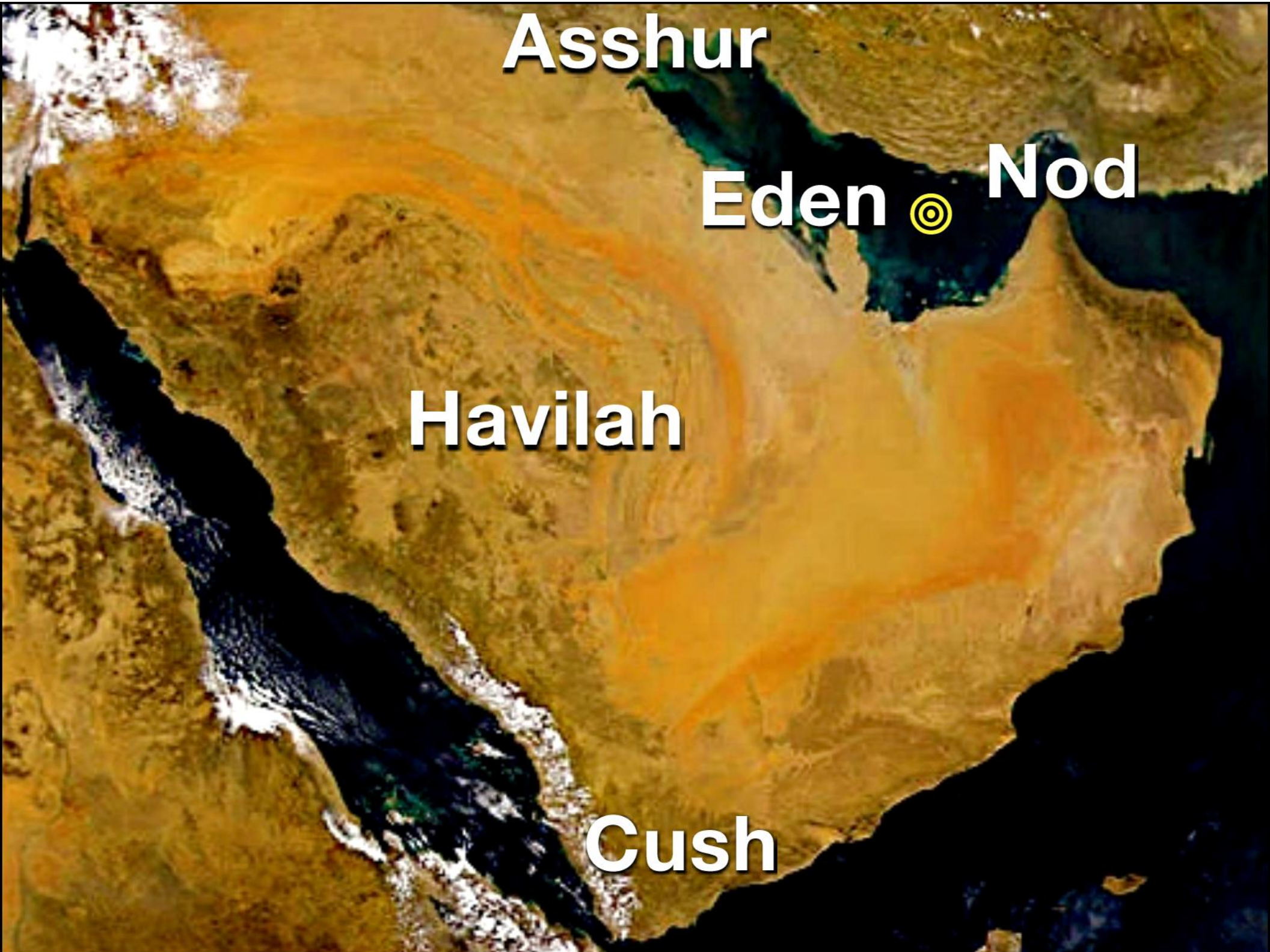
Havilah

Cush









Asshur

Eden  **Nod**

Havilah

Cush