This is an extension of the known Maxwell equations according to the Hall Photon Theory.
Charles J. Hall, who has worked in Area - 51, has published this theory.
I calculated with Mathematica the changes in the well-known laws of physics (Gauss' Law of Electricity, Gauss' Law of Magnetism, Faraday's Law, Ampère's Law and two new laws, according to the Hall Photon Theory).

```
c = 2.99792458 * 10^8 * m / s;
ϵ0 = (2 500 000 Ampère m)/(c^2 π s Volt) (* = 8.85418781762039*10^-12 *Ampère*s/(Volt*m) *);
μ0 = 4 * π * (10^-7) * Volt * s / (Ampère * m);
```

```
ϵ0 * μ0 * c^2
```

```
1.
```

```
Inactivate[{eq1(*gaussE*) = Div[ℰ[x, y, z, t], {x, y, z}] == ρt[x, y, z, t] / ϵ0,
   eq2(*no monopoles *) = Div[ℬ[x, y, z, t], {x, y, z}] == 0, eq3(*faraday*) =
    Curl[ℰ[x, y, z, t], {x, y, z}] == - D[ℬ[x, y, z, t], t] - D[𝒮[x, y, z, t], t],
   eq4(*ampere*) = Curl[ℬ[x, y, z, t], {x, y, z}] - 1/c^2 * D[ℰ[x, y, z, t], t] +
     Div[𝒮[x, y, z, t], {x, y, z}] == μ0 * jm[x, y, z, t],
   eq5 = Curl[𝒮[x, y, z, t], {x, y, z}] == 0 ,
   eq6 = Div[𝒮[x, y, z, t], {x, y, z}] == μ0 * jm[x, y, z, t]}, Div | Curl | D];
```

```
Grid[Transpose[{{"Gauss's Law for Electricity", "Gauss's Law for Magnetism",
     "Faraday's Law", "Ampère's Law", "No Rotation of Star Shine field",
     "Changing Star Shine field produces magnetic field" }, %}],
  Alignment → Left, Dividers → All, Spacings → {4, 2}] // TraditionalForm
```

Gauss's Law for Electricity	$\nabla_{\{x,y,z\}} \cdot \mathcal{E}(x, y, z, t) = \left(1.12941 \times 10^{11}\, m\, \text{Volt}\, \rho\text{t}(x, y, z, t)\right) / (\text{Ampère}\, s)$
Gauss's Law for Magnetism	$\nabla_{\{x,y,z\}} \cdot \mathcal{B}(x, y, z, t) = 0$
Faraday's Law	$\nabla_{\{x,y,z\}} \times \mathcal{E}(x, y, z, t) = -\frac{\partial \mathcal{S}(x,y,z,t)}{\partial t} - \frac{\partial \mathcal{B}(x,y,z,t)}{\partial t}$
Ampère's Law	$\nabla_{\{x,y,z\}} \times \mathcal{B}(x, y, z, t) + \nabla_{\{x,y,z\}} \cdot \mathcal{S}(x, y, z, t) - \frac{1}{m^2}\, 1.11265 \times 10^{-17}\, s^2\, \frac{\partial \mathcal{E}(x,y,z,t)}{\partial t} = (\pi\, s\, \text{Volt}\, j\text{m}(x, y, z, t)) / (2\,500\,000\ \text{Ampère}\, m)$
No Rotation of Star Shine field	$\nabla_{\{x,y,z\}} \times \mathcal{S}(x, y, z, t) = 0$
Changing Star Shine field produces magnetic field	$\nabla_{\{x,y,z\}} \cdot \mathcal{S}(x, y, z, t) = \frac{\pi\, s\, \text{Volt}\, j\text{m}(x,y,z,t)}{2\,500\,000\ \text{Ampère}\, m}$

"Gauss's Law for Electricity"	$\nabla_{\{x,y,z\}} \cdot \mathcal{E}(x, y, z, t) = \frac{\rho t(x,y,z,t)}{\epsilon 0}$
"Gauss's Law for Magnetism"	$\nabla_{\{x,y,z\}} \cdot \mathcal{B}(x, y, z, t) = 0$
"Faraday's Law"	$\nabla_{\{x,y,z\}} \times \mathcal{E}(x, y, z, t) + \frac{\partial \mathcal{S}(x,y,z,t)}{\partial t} + \frac{\partial \mathcal{B}(x,y,z,t)}{\partial t} = 0$
"Ampère's Law"	$\nabla_{\{x,y,z\}} \times \mathcal{B}(x, y, z, t) + \nabla_{\{x,y,z\}} \cdot \mathcal{S}(x, y, z, t) - \frac{\frac{\partial \mathcal{E}(x,y,z,t)}{\partial t}}{c^2} = \mu 0\, jm(x, y, z, t)$
"No Rotation of Star Shine field"	$\nabla_{\{x,y,z\}} \times \mathcal{S}(x, y, z, t) = 0$
"Changing Star Shine field produces magnetic field"	$\nabla_{\{x,y,z\}} \cdot \mathcal{S}(x, y, z, t) = \mu 0\, jm(x, y, z, t)$

Producing Ampère's Law with consideration of the Star Shine field:

```
Inactive[Curl][#, {x, y, z}] & /@ eq4 /. jm → (0 &) // FullSimplify
```

$$\nabla_{\{x,y,z\}} \times 0 == \nabla_{\{x,y,z\}} \times \left(\nabla_{\{x,y,z\}} \times \mathcal{B}[x, y, z, t] - \frac{1.11265 \times 10^{-17}\, s^2\, \partial_t \mathcal{E}[x, y, z, t]}{m^2} + \nabla_{\{x,y,z\}} \cdot \mathcal{S}[x, y, z, t]\right)$$

Producing Faraday's Law:

```
Inactive[Curl][#, {x, y, z}] & /@ eq3 /. jm → (0 &) // FullSimplify
```

$$\nabla_{\{x,y,z\}} \times \left(\nabla_{\{x,y,z\}} \times \mathcal{E}[x, y, z, t]\right) == \nabla_{\{x,y,z\}} \times \left(-\partial_t \mathcal{B}[x, y, z, t] - \partial_t \mathcal{S}[x, y, z, t]\right)$$

Producing Gauss' Law for Electricity

```
Inactive[Div][#, {x, y, z}] & /@ eq1 /. jm → (0 &) // FullSimplify
```

$$\nabla_{\{x,y,z\}} \cdot \frac{1.12941 \times 10^{11}\, \text{m Volt}\, \rho t[x, y, z, t]}{\text{Ampère s}} == \nabla_{\{x,y,z\}} \cdot \left(\nabla_{\{x,y,z\}} \cdot \mathcal{E}[x, y, z, t]\right)$$

Producing Gauss' Law for Magnetism

```
Inactive[Div][#, {x, y, z}] & /@ eq2 /. jm → (0 &) // FullSimplify
```

$$\nabla_{\{x,y,z\}} \cdot 0 == \nabla_{\{x,y,z\}} \cdot \left(\nabla_{\{x,y,z\}} \cdot \mathcal{B}[x, y, z, t]\right)$$

@Charles Hall: Now we consider the last two formulas in the HPT paper:

(1) $F == -\frac{K S_1 S_2}{R^2}$

and

(2) $F == -\frac{K S_1}{R^2}$

and ask: which units has the Star Shine force constant K?

Hm, if F is a force, with units N = $\frac{\text{kg m}}{\text{s}^2}$, S1 and S2 charge strengths in Coulomb, and R is a length in meters,
then according to equation (1) the unit of K must be meters/farad, the reciprocal unit of ϵ0.
But introducing K with this units in (2), the left side of (2) has the units $\frac{\text{kg m}}{\text{Ampère s}^3}$, so it cannot be a force.

Whatever units we chose for K: either the F in (1) or the F in (2) has the units of a force, but not both.
Is something wrong with this equations, or is it only a mistake by me?
Would be very pleased to read an answer from you.

At the end of the year 2017, indirectly I could send Charles Hall this calculations and received his confirmation that they are correct